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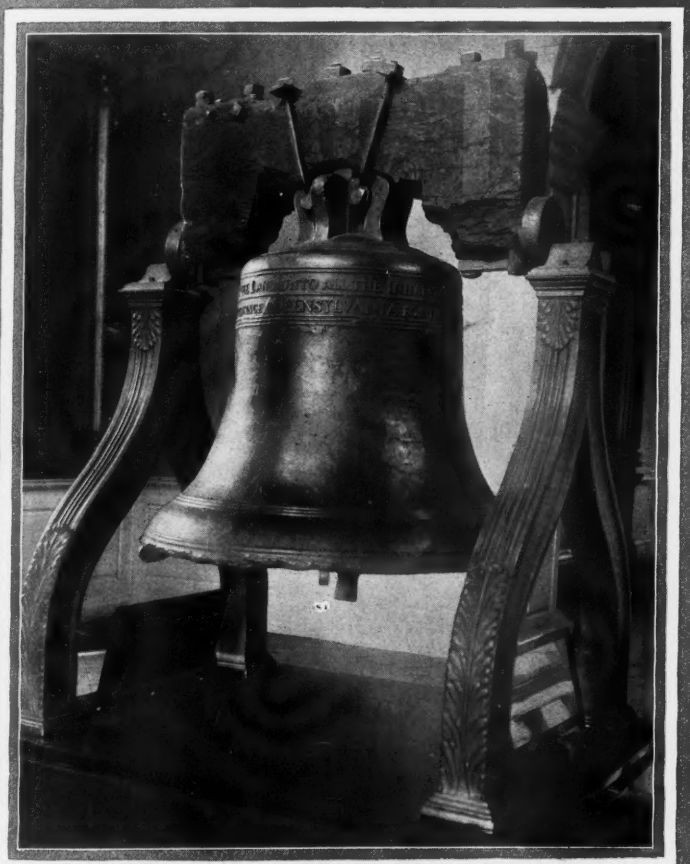
THE DENTAL DIGEST



JULY 1924

VOL. XXX - NO. 7

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THE
DENTAL DIGEST

Vol. XXX JULY, 1924 No. 7

The Mutual Relationship Between the Specialist and the General Practitioner of Dentistry*

By A. H. Ketcham, D.D.S., Denver, Colo.

Mr. President and Fellow Practitioners: When asked by our Executive Committee to give an address upon this subject, my first impulse was to decline, but further consideration led me to realize that a better understanding between the general practitioner and the specialist is needed. My first thought was that the application of the Golden Rule covers these relations. An analysis of this subject shows that relationship means responsibility—responsibility of the specialist and the general practitioner to each other, responsibility to the individual patient, and responsibility to the public at large.

In cases of the direct reference of a patient by the general practitioner to the specialist, there can be no question but that the specialist should consult with the general practitioner in order that together they may map out the best course to pursue to conserve the patient's welfare.

Then, too, in the cases where patients come of their own accord, or are referred, but on account of some peculiar notions try to conceal the identity of their dentist, it may take adroit questioning to learn "who is who," and sometimes months may elapse before the desired information is gained. In passing, I might warn all to pay no attention to tales brought by patients in regard to other practitioners, for the patient is often ignorant or may even be malicious, and *you* may be the next one to suffer.

Again, a patient may have more than one dentist, and have been referred by several. In all these cases I believe that the specialist should endeavor to consult with the dentist of the patient's choice and refer the patient back for treatment not in the specialist's line.

Now, the question arises, just how far may the general practitioner go in dictating the treatment by the specialist. We might answer by asking, "Why does the general practitioner refer the patient to the specialist? Is it because the general practitioner is too busy to treat that case, or is it because the specialist is supposed to possess expert knowledge along the line of treatment needed by that patient?" Dr.

*Read before the Denver (Colo.) Dental Association, November, 1923.

Edmund Noyes, who is one of the most prominent of the older general practitioners of Chicago, in a paper entitled *The Mutual Relations of Specialist and General Practitioners of Dentistry,* published in The Journal of the American Dental Association, January, 1923, said:

"No one has a right to announce himself as a specialist unless he has made exhaustive study of his specialty and acquired unusual skill in the practice of it. The law requires of the general practitioner that he possess ordinary knowledge and ordinary skill in everything pertaining to his practice, but the law requires of the specialist that he know practically everything about his specialty, and that he possess much more than the ordinary skill required of the general practitioner. * * * The specialty of full denture prosthesis should be developed to a greater extent than at present. * * * There are few things in dentistry, perhaps none, in a large proportion of cases that are so exacting and difficult as the making of full upper and lower sets of teeth, if the functions of mastication and speech are to be fully restored and the form and expression of the features are made as nearly normal as possible. It requires a technical and artistic skill closely akin to that of the sculptor or painter, but no patient with a perfect set of teeth can be hung up in an art gallery for all beholders to admire, and so give the dentist the fame he deserves."

Continuing, he says: "Of all the specialties I believe that orthodontia should be the most exclusively special of any, and it would be better for the little children if it were as rare for a general practitioner to undertake an orthodontia case as it is for him to undertake either the surgical or mechanical treatment of a cleft palate case. * * * The cases are numerous enough in which children have been cruelly treated for years, with a final result worse than if nothing had been attempted, to counterbalance the benefit of a good many simple cases successfully treated. I am tempted to say that if the schools would graduate their men with enough instruction in orthodontia to make them realize that they are totally incompetent to practice it, they would render a better service to the public who need orthodontia service."

Not always is it easy for the general practitioner and specialist to work together for the best interests of the patient, for they may both be like the hoot owl and the whippoorwill in the darkey's version which reads like this:

"De Hoot Owl said to de Whippoorwill,
'You don't sing nothin' and you won't keep still,
Don't you know it would be polite
To let folks listen to me?'

Said the Whippoorwill to dat old Hoot Owl,
'You sleep all day and at night you prowl.
You shows your ignorance all complete
Interruptin' the music I make so sweet.'

And so it is with man or bird,
Each one thinks *his* voice should be heard;
Tho' most of us ain't got much more skill
Than dat old Hoot Owl and de Whippoorwill."

Perhaps the specialist may not have a sufficiently broad vision of all the different factors entering into the treatment of the case so that there may be a perfect correlation of all factors. He may be something like William J. Bryan in the story which he tells of one of his early experiences in politics. He says that as a young attorney he located in a Nebraska town, and that though it was late in the year he at once got into politics for there was to be an election the next March; that the man holding the Governor's chair was a Republican and was running for reelection. Bryan says that it required no consideration at all for him to conclude that a Republican should not be elected governor! Then, too, through investigation he discovered things which the governor had done which should *not* have been done, and other things which he should have done that he had left undone, so Bryan entered into the fight to defeat the Republican candidate and made a total of fifty speeches. However, much to his surprise and chagrin, the Republican governor was reelected by a huge majority! Mr. Bryan's humiliation was increased as he lived in the same town as the governor, and avoided meeting him for some time, but finally, agreeing to appear on a St. Patrick's Day program, he found that the governor was presiding and that it would be impossible to avoid further the dreaded meeting. Bryan's name was the last on the program, which was made up of speeches and songs. Finally it came his turn. The governor announced, "The next on the program is Mr. W. J. Bryan," and as he came on the stage, the governor advanced with extended hand. A wave of appreciation swept over Mr. Bryan. Then the governor, in all sincerity, whispered, "Do you sing or speak?"

As Dr. Noyes has pointed out, the specialist's responsibility to the patient is greater than that of the general practitioner, and I am informed that the courts have held this to be true in the practice of a medical specialty. In dentistry we could not hope to escape this additional responsibility.

Now, if the specialist must assume this extra responsibility on account of his claims to superior knowledge along a certain line, and if he does render a superior service, then his compensation should be

in proportion to the excellence of the service rendered. The general practitioner has no more right to set fees for the specialist's services than the specialist has to name the fee the general practitioner shall charge, unless there has been a conference on the case between general practitioner and specialist and a fee agreed upon.

I would caution the general practitioner against belittling the difficulties presented by a case or the skill required to treat the same successfully in order to save the patient a little money. Do not think that by belittling a certain branch of dentistry you may be able to elevate your standing in the mind of the patient. All conscientious dentists have a fee for each class of operations which is fair for the average, well-to-do patient, but for people who are in more moderate circumstances the fee should be adjusted accordingly. Always remember that your greater responsibility is to the patient, even though the friendship and support of your fellow practitioner may thereby be sacrificed.

The general practitioner and the specialist have other and greater responsibilities than those they owe to each other—their responsibility to the individual patient and their responsibility to the public at large. These responsibilities apparently rest but lightly upon the shoulders of many of our profession. Fellow dentists, do we realize that our responsibility to the public is in direct proportion to the knowledge of dentistry which we are supposed to possess? This is a responsibility which, try as we may, we cannot repudiate. If two small children were playing on the bank of a stream and one fell in and was drowned, would the other be blamed for lack of effort to save the life of his playmate? But if a *man* were standing near by and made no effort to save the baby's life, would he be permitted to remain in that community? Just as surely the responsibility is ours and we cannot escape it.

It is our duty to do our very best to educate the individual patient thoroughly in regard to the conditions in his or her mouth, and this cannot be accomplished without first a thorough diagnosis. We must study each case, with the possible exception of the very simplest, not only through the medium of mouth mirror, explorer and ligature, but also by models and radiograms, so that an intelligent survey of all conditions in the mouth may be made. Do you know that often approximal cavities, which may not be discovered by the usual means, will be revealed through the medium of the radiogram? I recall two cases in which decay had extended until the pulp was involved and in which radiograms made about a year previous, for the purpose of diagnosing the position of impacted third molars, showed very small approximal cavities in the second bicuspid region. These were overlooked in both radiogram and the usual examination; consequently the cavities were

neglected until the usefulness of the teeth had been jeopardized. You may say that patients will not pay for the time involved to make this thorough diagnosis. Does not a great deal depend upon the force of character, sincerity, and clearness which accompanies the explanation that a thorough diagnosis is best?

"But," you may say, "how can I meet my responsibility to my patients? I work hard all day long taking care of the most necessary work in my patients' mouths and feel that I must do this in order to make a living and possibly save a little, and I do not have time to talk with my patients and explain in detail the condition in which I find their mouths and point out all the work that is necessary to be performed in order to put their mouths in the best condition." The answer is:

(1) Take fewer patients, or take on an associate.
(2) Refer the work which you find most difficult to the specialist.
(3) Join one or more of our study classes and be a better dentist.

The majority of your patients will appreciate better dentistry and if you know or can learn how to explain the benefits of better dentistry to your patients, they will pay a better fee for a better service more cheerfully than they paid the old fee for a less skillful service.

You know, or it is your duty to know, as the knowledge is obtainable and you are held responsible for the imparting of the information to your patients, that septic teeth, whether from the death of the pulp or from pyorrhea, are a menace; that if the patient is in ill health the removal of all foci of infection, not only in the mouth but in other parts of the body, is indicated and that even this may not effect a cure if put off too long. Do you attempt to make a diagnosis of septic conditions or attempt a tooth extraction, unless certain that it is simple, or to fill a root canal without the aid of an accurate radiogram? If so, you are assuming in the eyes of the law a greater liability than our best informed dentists care to assume.

Do you know tooth form and occlusion the way a dentist should? Are your restorations efficient in form and occlusion? If not, are you meeting your responsibility to the patient? Do you observe the occlusion of the first permanent molars when they are erupting in your child-patient's mouth, and if the occlusion is not correct mesio-distally, bucco-lingually, or if any of these molars are rotated, do you call the parents' attention to this condition and point out that these teeth should be placed in occlusion at once and that otherwise the remaining teeth to erupt will not be in occlusion, and the efficiency of the child's dental apparatus, as well as immunity to decay and peridental diseases will be greatly lessened? If not, then you are not meeting your responsibility to your patient.

Are you prepared to answer questions about proper food for the expectant mother, for children, or for the public at large? Do you know that white or bolted flour should never be eaten; that whole-wheat is a much better ration; that manufactured sugar products are a direct menace to health, for they not only destroy a person's appetite for, but capacity to digest, a well-balanced ration? Sugar apparently is a "lime thief" as it interferes with the assimilation of the lime salts which should go to make bone and teeth. Do you tell your patients that the craving for candy, cakes and jam may be satisfied to the greater benefit of the body by sugars manufactured by nature, as in honey, raisins, figs, dates, and most ripe fruits? Do you tell them that orange juice is rich in essential vitamines, and that next come tomatoes? That leafy vegetables are also rich in vitamines and that excessive heat or prolonged cooking destroys some of the vitamines? Do you tell them that a generous portion of salads composed of lettuce, celery and fruits should be eaten to finish the noonday and evening meals? Of course, you tell them that milk is a very essential food and rich in vitamines as well as other essential food values, and that malnourished children should drink milk not only with their meals, but midway between breakfast and lunch, and luncheon and dinner; that they should take at least a quart a day. Do you tell your patients that the average American diet is much too rich in meats and other proteids; that they should eat a larger quantity of vegetables, both raw and cooked; that they need spinach and similar vegetables for roughage?

You may ask, "How can I obtain this knowledge?" Well, there are books like McCann's *Science of Eating,* Emerson's *Nutrition and Growth in Children,* McCollum's *The Newer Knowledge of Nutrition,* and then there is the Defensive Diet League of America, started by the business manager of the Dental Summary; all giving the latest thought and result of research along dietetic lines. Dr. H. F. Hoffman recently taught a class of dental hygienists the later knowledge in regard to diet and nutrition, and I would suggest that he be induced to give dentists instruction along this line.

In every dentist's practice there are small children in whose mouths the foundation of future ill health and disease is being laid, and but very, very seldom is any mention made of this by the dentist to the children's parents. How few dentists call in the children of the families who look upon them as their dentist, as soon as the age of two and a half years is reached, to make an examination and then perform the service of prophylaxis! After the initial visit, inspect the child's mouth regularly at least every three months, and when the first sign of decay is noted, fill the cavity. How many educate the parents to the fact that the care of the temporary teeth is even more necessary than the care of the permanent, for the reason that the child must

masticate and digest sufficient food each day, not only to supply energy for the enormous activity of a playful child, but to assimilate food to gain from three to twelve pounds each year, according to age? Also, that the temporary teeth must be retained until the permanent teeth are about to erupt, to aid in normal development of the jaws? How many tell parents that about 10% of children are so unfortunate as to have congenital absence of one or more of the permanent teeth which should succeed the temporary teeth?

But you say you are too busy to do this? Does that lessen your responsibility to the patient? No, it does not! You ask, then, how to meet this responsibility; how to escape the chagrin and annoyance and the heartaches of seeing the children in your practice coming back with decay around fillings, with putrescent pulps in the temporary teeth, with pulps exposed in the permanent teeth, with the child suffering from malnutrition, with stained teeth, roughened enamel margins and inflamed gum tissue showing that the road to pyorrhea is broad and speedy. The child is perhaps from 10% to 30% under weight, very susceptible to all children's diseases, with resistance broken so that there is a great probability of the child's losing its life if attacked by one of high virulence. The answer is that you can, with good grace and good conscience, fulfill your responsibility to the children in your practice by referring them to a competent child's specialist and if only one-tenth of the dentists were broad, big and courageous enough to assume the responsibility which is theirs, there would be work for many, many pediodontists.

Our second responsibility is to the public at large. This responsibility is individual to a degree, but in a much larger way is collective. The individual can accomplish comparatively little in educating the public to the advantages of good dentistry and to the value of preventive dentistry, but where the individual is weak, much may be done through cooperation.

Why do the members of the dental profession not get together in a campaign for the education of the public? Why, instead of cooperating and pushing the things which are brought out for the education of the public, do they use destructive criticism of the methods employed? Does not the story of the hoot owl and the whippoorwill answer this question? Remember what Drs. Woods Hutchison, Copeland, and Evans are doing to educate the public, through the press, to health and right living; but it is only through cooperation that we, as members of the dental profession, may meet our responsibility to the public. I am a firm believer in advertising dentistry; in advertising the benefits of good dentistry; in advertising the wonderful benefits to be derived from preventive dentistry; but I abhor the very thought of advertising

the individual dentist, and it is not necessary to advertise the individual dentist while educating the public.

Sometimes it is rumored that some of our dentists are not very busy, or at other times that the practice of dentistry in general seems to be quite dull. Now, gentlemen, is such a condition necessary? Would it be true if we all realized our responsibility to the public? We can educate the public through proper propaganda, so that it will appreciate good health and the benefits of good dentistry, just as surely as the automobile manufacturers, dealers, and salesmen have made the public appreciate the pleasure to be derived from the ownership of an automobile. Perhaps the public, through educational propaganda, may even be willing to mortgage their homes, their salaries, or to form saving clubs, as one automobile manufacturer has proposed, not to own an automobile, which is a liability to the owner and a hazard to the rest of the population, but in order, through good dentistry, to possess good health!

725 Mack Building.

Amalgam Restorations—A Progressive Group Clinic*

Fourth Clinic—Inserting and Finishing

By Frank R. Bicknell, D.D.S., New York, N. Y.

Mercury

It is very important to use mercury which is as pure as possible and carefully kept from contamination. The use of bottles with ground stoppers is recommended.

Alloy

Should be one of high-silver content. In using shavings a longer time is consumed in amalgamating mercury and alloy, therefore filings are preferable as the sooner the incorporation of the alloy and mercury takes place the greater is the resulting edge-strength, and there is also a lessened volume change in the resultant filling. An engine mixer reduces time of incorporation and is better for this reason.

Mixing

The alloy and mercury should be weighed out in correct proportions or measured by amalgam gauge and placed in mortar or engine mixer. After two minutes of mixing in the engine mixer or three minutes with mortar and pestle, have assistant knead for one minute in the hand. In taking the mass from the mortar it is usually necessary to expel a small amount of mercury to bring it to the proper consistency for kneading. When in this condition, if rolled between the fingers, a characteristic tin squeak is observed and an imprint of the finger is retained. At this point it might be well to mention that there are three stages during which excess mercury may be removed: (1) prior to kneading in the hand; (2) as individual pieces are handed to operator; (3) in packing. The best plan to follow is to remove just that amount which makes the amalgam most easily workable.

Carrying to Cavity

One piece of amalgam at a time should be broken off with the fingers by the assistant and placed in a large spoon instrument. This is now carried to the cavity and brought to place by using serrated pliers with the left hand and packing to place with the right hand. The first piece should be fairly soft so that it will reach all the fine angles in the floor of the cavity. During this procedure by the operator the assistant should be continually kneading the mass in the hand, thus retarding the setting.

*Given at the Academy of Medicine, New York, December 3, 1923, by the Bellevue Hospital Dental Clinic Club, under the direction of John T. Hanks. D.D.S.

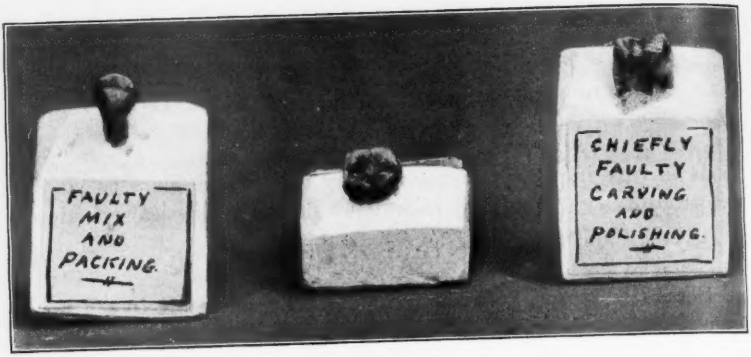

Fig. 20

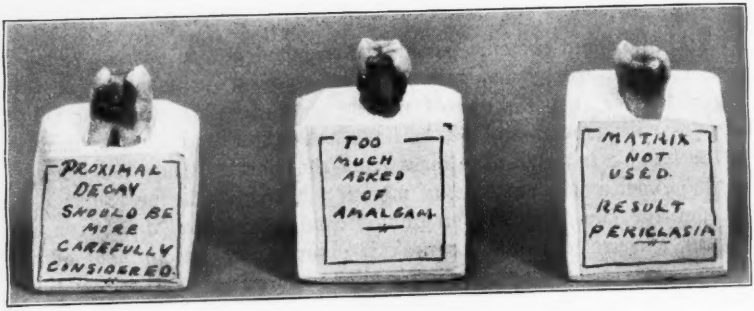

Fig. 21

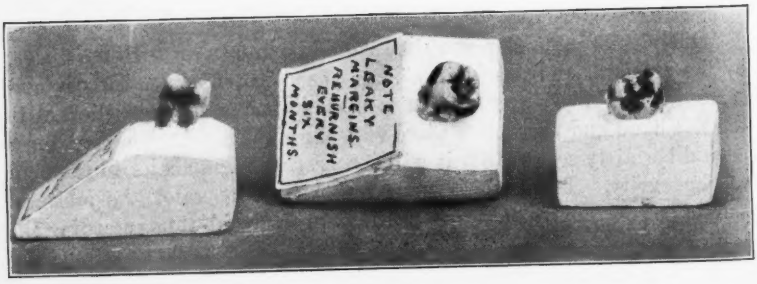

Fig. 22

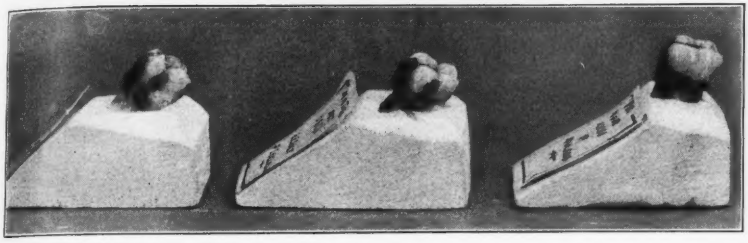

Fig. 23

Figures 20, 21, 22 and 23 show examples of faulty amalgam fillings due to different causes as indicated by the labels. All of the illustrations in this section were made from models exhibited at the progressive clinic.

Packing

The largest plugger possible should be used. The mercury should be expelled from the last few pieces by wringing through gauze. The cavity should be packed well over the margins and then a large serrated plugger with mallet force may be used. The other pluggers need not be serrated, as it is difficult to keep serrations from filling with amalgam. Of course, excess mercury should be removed when the packing process brings mercury to the surface. This may be done with a spoon excavator.

Carving

When this technic of insertion has been used, it is unnecessary to wait before carving. Using a suitable carver for the particular type of filling, quickly carve up approximately by following around the external enamel line, being careful not to sink into the amalgam at the margins. Now with delicate knife carvers carefully trim down the filling, working from tooth to filling, as by this method one is less likely to drop below the margins. When a matrix is used it should be removed as soon as possible and the patient instructed to close gently, showing the bite relation. The filling is now carved with this as a guidance for articulation. In interproximal space the matrix should be so adapted that the use of pumice and whiting alone will suffice for finishing; if a bulk is left at this point it is better to remove at once and re-adapt the matrix.

The dentist should of course have a good knowledge of the anatomical forms of the teeth, and of any unusual articulation into which the teeth may have drifted, causing new relations. A lack of observance of these details might lead to a traumatic occlusion, with resulting periodontoclasia and eventual loss of the tooth.

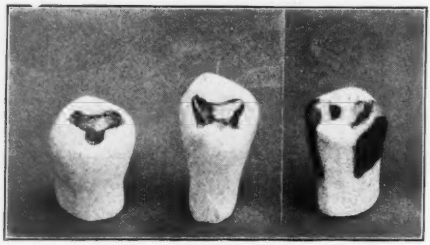

Fig. 24

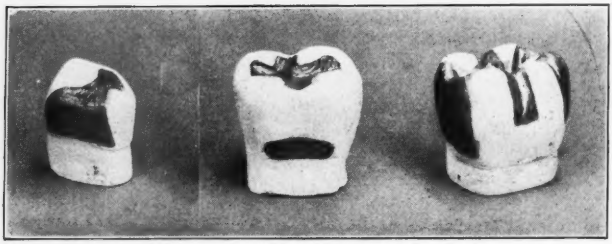

Fig. 25

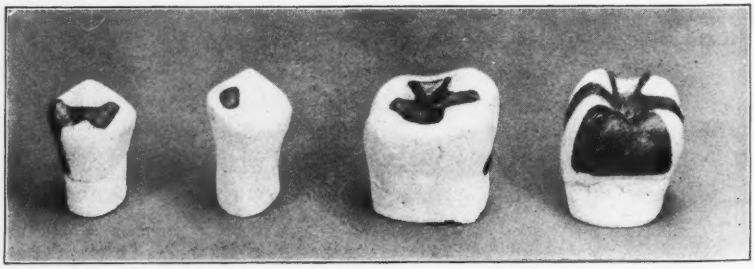

Fig. 26

Figures 24, 25 and 26 show proper cavity outline and restoration of contour.

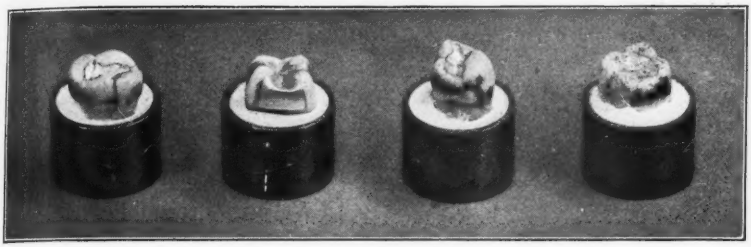

Fig. 27

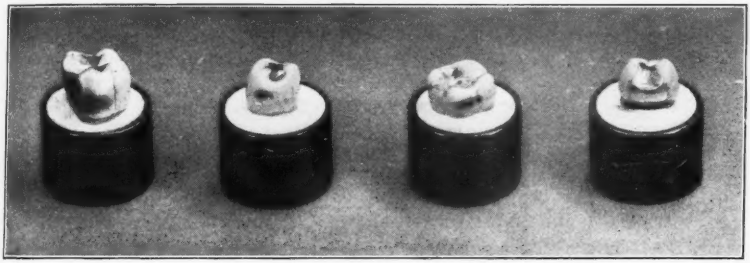

Fig. 28

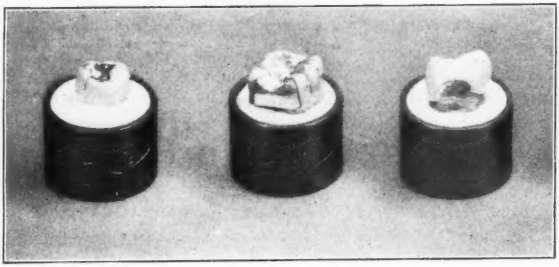

Fig. 29

Figures 27, 28 and 29 show natural teeth with amalgam fillings placed. These were designed to exhibit various forms of fillings and various steps in the finished fillings.

Fig. 30

Fig. 31

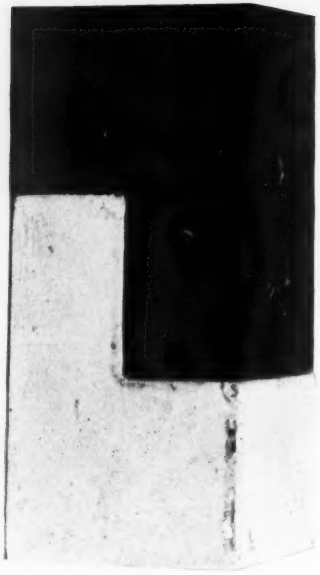

Fig. 32

Figures 30, 31 and 32 are blocks made to represent proper and improper relations of filling to tooth wall. Fig. 30 exhibits an inclined plane which tends to unseat or force filling out of cavity. Fig. 31 shows a proper relation—straight walls; and Fig. 32 presents a mechanically correct relation, giving proper seating of filling and protection of tooth structure.

Burnishing

The filling should be burnished only lightly following carving, as it is not sufficiently hard to withstand heavy burnishing at the first sitting. The patient should eat only soft foods on the filling, and those not above body temperature for 48 hours after insertion. At the second sitting use steel burnishers of as large a size as will reach all surfaces. Burnishing is most important as it increases density of filling where most needed.

Polishing

The filling may be polished by the use of pumice stone on fine bristle wheels, rubber cups or felt wheels. An ordinary rubber eraser sharpened to a point and mounted on a mandrel and used in a handpiece is very useful for reaching the inaccessible places. Fine whiting, imbedded in glycerine, on a small pointed orange-wood stick around which a small piece of absorbent cotton has been wound, and used in a handpiece, gives a very good final polish. For interproximal spaces china silk strips may be used to good advantage. All amalgam fillings should be reburnished and repolished every six months.

Summary

Use rubber dam wherever possible, a dry field being essential.

Apply matrix in all three-walled cavities. This is necessary, as only in this way can amalgam receive sufficient condensation.

Use correct weight of alloy and mercury. Only when they are in proper proportions does maximum incorporation take place in a given time.

Mix for at least three minutes, plus one minute of kneading in the hand.

Remove excess mercury, in any of the three stages.

Packing must be completed before setting takes place; otherwise, there will be a lack of union between the separately condensed pieces.

Exert the greatest possible pressure in packing. This is, of course, consistent with strength of cavity or matrix walls.

Carve from the tooth to filling, to avoid sinking below the margins.

Burnish only lightly at the first sitting. Wait 48 hours before final burnishing.

Finish only by polishing. Carving should so approximate correct anatomical form that heavy grinding should be unnecessary.

Bellevue Hospital.

Tips in Anesthesia and Surgical Exodontia*

By Herman Ausubel, D.D.S., Brooklyn, N. Y.
Chief, Oral Surgery Department, Bikur Cholim Hospital, Brooklyn; Instructor in Anesthesia and Oral Surgery, Postgraduate Courses of Allied Dental Council.

(*Continued from June*)

Advantage of Being Ambidextrous. It would be advantageous for every dentist to train himself to use his left hand effectively, for it comes in handy in administering mandibular injections on the left side of the jaw and also in manipulating elevators for the removal of teeth and roots. Those who can use only their right hands may cross their hands in giving a left mandibular injection. Another method may be used by bringing the left hand around the patient's head, palpating the bone with the left index finger and injecting with the right hand.

How To Eliminate The Puncture Pain. Be careful to use sharp needles to obviate the pain of the initial puncture. Use a stone for sharpening dull needles by passing them through cotton rolls or a cork, just exposing the tip, which will facilitate the process of grinding. You may also touch the area of the initial puncture with a drop of phenol or use the ethyl-chlorid spray to eliminate the pain caused by the prick of the needle.

Ethyl-Chlorid Spray. Ethyl chlorid may be used for the removal of temporary teeth, pyorrhetic teeth, or abscessed teeth, particularly in people suffering from cardiac or pulmonary troubles. It may also be used for the lancing of abscesses, removal of small growths, etc., in the absence of N_2O and O.

Uses of Different Tablets. Use a tablet containing a relatively large quantity of epinephrin, or adrenalin, for extensive surgical operations, where prolonged and profound anesthesia is necessary. For dental and exodontia purposes use a tablet containing about two-fifths as much adrenalin, and for cardiacs and people suffering from pulmonary affections and neurosis use a tablet containing no adrenalin.

Uses of N_2O and O. While preferring procain-adrenalin-Ringer's solution for all oral surgical operations, for obvious reasons the writer uses N_2O and O in the following cases:

1. In trismus.
2. In cases of infection in the region of the nerve foramina where conduction anesthesia cannot be used.
3. In unmanageable children.
4. In cases where a number of loose teeth have to be extracted in different parts of the mouth.
5. In extremely nervous patients who cannot stand the sight of an instrument.

* Read before the Westchester County (New York) Dental Society, May 15, 1923.

6. In surgical operations of short duration, as the lancing of an abscess, removal of a small tumor, reducing fractures, etc.

Contra-Indications. N_2O and O should not be used in the case of alcoholics, drug addicts, athletes, diabetics and patients afflicted with arteriosclerosis. In extracting teeth for diabetic patients, who are apt to bleed extensively, it is best to use a tablet containing much adrenalin and extract one tooth at a time.

The face inhaler should be used exclusively by the general practioner, unless he has a competent anesthetist to assist him, in which case the nasal inhaler may be used, which has the advantage that the patient may be kept under narcosis for a longer period of time.

It is always advisable to have a third party present, preferably a woman relative of the patient, when administering a general anesthetic to women patients, in order to avoid the possibility of medico-legal complications.

Use a throat-pack made of gauze sponge to which is secured a piece of tape, held on the outside by a hemostat, in order to prevent the accidental slipping of a tooth or root into the larynx.

Attach a heavy strap to the back of the chair, unnoticed by the patient, in administering a general anesthetic, so that you can straight-jacket him to the back of the chair should he manifest any fighting propensities.

In treating nervous patients, display tranquility of mind, which they can read in your face, in order to allay their fear. Be firm but sympathetic in your demeanor. It is sometimes advisable to cover up the patient's face with a towel before operating and to keep the instruments covered, away from the patient's sight, for obvious reasons. A bromural tablet administered internally a half-hour before operating gives excellent results in quieting an otherwise extremely nervous patient.

Strength of Solution. It is not necessary to use a 2% solution. A 1% to 1½% solution is just as effective. Use two tablets to 3 or 4 c.c. of Ringer's solution for one injection.

Anesthesia for Bicuspids. For upper bicuspids it is better to use a high infiltration anesthesia, injecting into the periapical area, rather than to use the zygomatic, infra-orbital, and posterior palatine injections for that purpose. In cases of infection in that area, N_2O and O or the ethyl-chlorid spray is indicated.

Ideal Solution. The best solution is one made for each patient from a suitable tablet of procain-adrenalin dissolved in Ringer's solution at proper strength and injected at body temperature.

Factors to Consider. Remember, in deciding as to the method of anesthesia to be used for a given case, to use the one that is safest to the patient, simplest to the operator and that gives the most effective

result. A combination of the different methods is often desirable. A faddist to any particular form of anesthesia, whether it be general, conduction or other methods, reveals as little intelligence as an extremist in any other field of human endeavor, who shows that he has lost his balance of judgment and coordinated thinking powers. Keep your mind open to everything available, whether it be anesthesia, different forms of restorations, methods of root canal work, etc., and use each individually or in combination to get the best results in each given case.

Time to Operate. Do not try to operate immediately after the injection, before the solution has been given a chance to absorb; neither should a solution be injected into an inflamed area, where absorption is very poor and the results ineffective, nor should you inject into an infected area in order to avoid carrying the infection into healthy tissues.

Long Buccal Nerve. In giving mandibular injections it is well to remember that the long buccal nerve, which supplies the buccinator area, often extends downward into the reflection of the mucous membrane of the lower jaw, in the region of the molars. It is therefore advisable to test this area before operating by pricking it with a pointed instrument and watching the patient's eye for a reflex. If there are symptoms of tingling on the lower lip and side of the tongue, and there is a reflex, it is indicative that the mandibular injection was successful and the pain is therefore due to the long buccal nerve, which should be anesthetized by injecting a few drops in the buccal mucous membrane of the molar area. Very often, however, the tingling of the lip and tongue is absent, although there is profound anesthesia present, as is proved by testing the area and the subsequent painless operation.

In cases of infection in the long buccal area, a few drops may be deposited in the mucous membrane of the cheek, corresponding to the height of the molars or even above the molars, below Stensen's duct, thus intercepting the long buccal nerve as it descends.

Testing for Nervous Patients. There are some patients who will always complain of pain while testing the area. To these patients you should describe in advance the difference between the sensation of touch, which is not abolished by the injection, and the sensation of pain, which should be absent if your injection is successful. Then prick the mucous membrane on the buccal and lingual surfaces and watch for the eye reflex. If it does not respond, you may rest assured that the anesthesia is successful. In testing for an area, it is best to use the French interrogative, "This doesn't hurt you, does it?"

Syncope. There are some patients who faint very readily at the beginning of the operation. There are others who will use nerve restraint during the operation, but as soon as you finish, the sudden relaxation of the nerves will cause syncope. In these cases it is best

to throw the chair back a little and administer a little spirits of ammonia before injecting and deposit the solution very slowly, which decreases the tendency for fainting. Should the patient faint in spite of this, amyl-nitrite pearls crushed in a towel and kept before the patient's nose or aqua ammoniæ fortis kept near the nostrils will immediately revive the patient. An electric fan started in motion may do likewise. The chair should be thrown back as far as possible, to permit the blood to rush back to the head, or the head may be thrown forward between the knees, which accomplishes the same result.

It is advisable to explain the symptoms of anesthesia to patients in advance of their approach, as they may become frightened by the gagging and numbness resulting under the various injections.

Trismus. In cases of trismus, resulting from injecting into the internal pterygoid muscle, absorption takes place very slowly and may take several weeks to disappear. If there is no infection present, dry heat is applied externally in the region of the temporo-mandibular articulation, and the mouth is stretched gradually until the normal width is obtained. This condition may also disappear without any treatment. In cases of trismus resulting from infection, as in impacted third molars, Vincent's infection in the region of the third molars, etc., the removal of the cause will automatically take care of the trismus.

Hematoma. Should a blood vessel be punctured and the cheek be blown up, do not display any anxiety, but explain to the patient the nature of the accident, which will take care of itself as the blood coagulates in the tissues and controls the hemorrhage. An ice bag applied to the area may do some good. Some of the hemoglobin may break down underneath the skin, causing a brownish or bluish discoloration in a few days, which will disappear in time. A hot water bag applied to the area may help the blood to be absorbed.

Hysterical Patients. Patients inclined to fall into hysterics may give the operator considerable trouble by shouting, yelling, alternating with laughter, asking silly questions and acting foolishly. It is best to show them no concern and to display no fear in their behalf until they are under control. It is sometimes necessary to administer to these patients a subcutaneous injection of morphine before you can get them under control.

Pregnancy. One should not hesitate to inject or administer a general anesthetic for pregnant patients. The writer has operated on hundreds of these patients, at the beginning as well as at the end of gestation, without any trouble. More harm will be done to both patient and foetus by neglecting the teeth than by removing them when necessary.

Epileptics. Should a patient have an epileptic fit, it is best to put him in a place of safety, protecting the tongue from being bitten by

putting cotton or gauze sponges between the jaws and allowing the saliva to drip into a basin held under the chin, until the patient recovers.

N_2O and O Combined with Local Anesthesia. In operating under prolonged N_2O and O anesthesia, when there is troublesome bleeding, a solution made from the tablet containing most adrenalin may be injected into the tissues to control the bleeding.

In partial trismus, when the patient cannot open the mouth sufficiently for a mandibular injection, N_2O and O may be used as a preliminary. The mouth is stretched by means of the Allen mouth gag, and the injection administered as usual. An extensive surgical operation may then be performed under the influence of the local anesthetic, which has many advantages over the general anesthetic.

Caution. In grinding teeth for cavity preparation and bridgework under a local anesthetic, you should keep in mind the anatomical relation of the pulp chamber, as the natural guard, *pain,* is absent to warn you of its proximity. Neither should you overheat the teeth in the grinding process, as death of the pulp may ensue.

(*To be continued*)

Rational Treatment of Pulpless Teeth

By E. Alan Lieban, D.D.S., New York, N. Y.

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(*Seventh Article*)

Root Canal Filling

The object sought in filling the pulp canal is to seal hermetically the apical foramen, in order to prevent the egress of microorganisms or their waste products from the canal into the apical space, and also to preclude the possibility of entrance by transudation of fluids from the apical tissues into the canal. The filling material should be:

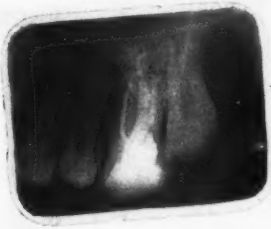
1. Non-irritating to the soft tissues.
2. Radiopaque.
3. Impervious to moisture.
4. Insoluble.
5. Allowed a medium setting-time.
6. Adaptable to the walls of the canal.
7. Non-shrinkable.
8. Non-porous.
9. Capable of being rendered absolutely sterile when introduced.
10. Easily removed.

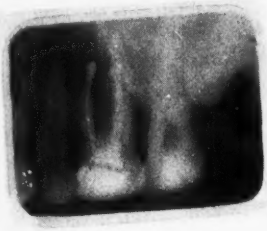
Technic of Filling Root Canal. After using the alcohol and chloraresin solution as previously described, the pulp canal is flooded with a thin solution of chlorapercha (milky consistency) introduced with a Rhein Universal pick. The solution should be worked as far toward the apex as possible. Cut off the pointed end of a sterilized gutta-percha point, and carry it into canal on point of pick toward the apex as far as possible. Remove pick. A fine root canal plugger is now inserted, and the gutta-percha point is dissolved with a rotating motion and slight pressure toward the apex. Care should be taken not to use too much force.

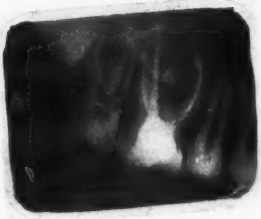
A whole gutta-percha point of proper dimension is selected, immersed in chlorapercha and carried into the canal with the serrated-end pliers as close to the apex as possible. Use a hot ball burnisher to remove end extending beyond the orifice. Wait a few minutes for some of the chloroform to evaporate and then proceed to mortarize with a fine plugger until the entire contents of the canal becomes a homogeneous mass. By exerting lateral pressure instead of direct pressure, encapsulation of the root end can be best accomplished without forcing too much gutta-percha into the apical space. This method will aid materially in filling the multiple foramina. A coarser plugger

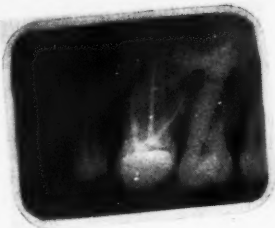
Student Work

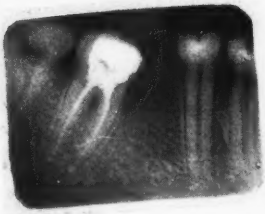
Filled by technic herein described

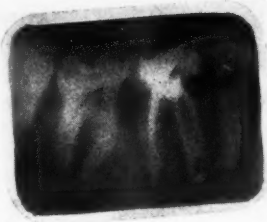


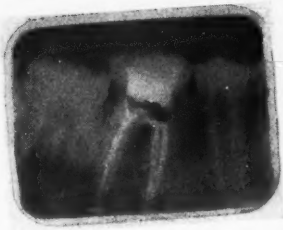












is now used to pack the mass gently toward the apex. A fine plugger is passed through the center of this mass until it reaches the apical third. A suitable gutta-percha point is immediately inserted in the gap caused by releasing the plugger. If gutta-percha in the canal is not sufficiently condensed, repeat the latter operation. Use a hot ball burnisher to remove excess, and swab with pledget of chloroform.

If x-ray apparatus is on the premises, take radiogram with the dam in position; if not, seal tooth carefully and send patient out to have the tooth radiographed. Should filling be short or insufficiently condensed, soften with chloroform, using slight pressure toward the apex to force filling material deeper. Insert an additional gutta-percha point and proceed as previously described for insufficient condensation. Check up with subsequent radiograms until filling is sufficiently condensed. Protect the canal filling at the orifice by sealing over with a thin layer of cement to insure against contamination. Seal with bibulous paper and baseplate gutta-percha.

During the operation the patient is advised to give notice as soon as sensitiveness is felt. Pain may be due either to pressure of the filling upon the apical tissues or to presence of air forced through the foramen in front of the filling, and may induce pericemental irritation.

Filling Root Canal with Large Foramen: Instead of first flooding the canal with chlorapercha as described, a gutta-percha point of proper dimension is selected, the flat end cut away and the point dipped into a solution of chlorapercha. The point is inserted into the canal with the base toward the apex. Chlorapercha is now introduced, a fine plugger selected, and the contents of the canal "mortarized." The remainder of the filling is completed as previously described. By utilizing this method we lessen the possibility of forcing chlorapercha or gutta-percha through the foramen.

Filling Root Canals of Deciduous Teeth: Due to its ease of manipulation, a combination of paraffin, bismuth and thymol is recommended —paraffin 65 parts, bismuth 34 parts and thymol 1 part. Melt the paraffin on a water bath, remove from the fire and add the bismuth and thymol with constant stirring (Prinz Dental Formulary). Introduce on a heated plugger. The material will follow the plugger to the apex. Withdraw the plugger while the substance is still in fluid state and it will completely fill the canal.

Post-operative Pain. After filling the pulp canal, if the patient complains of soreness, this may be relieved by treating the gums with a 50% solution of magnesium sulphate, using the cup electrode applied to the positive pole, 2 milliampères, for 15 minutes; or by painting the

gum above the tooth with a tincture of iodine followed by spraying with ethyl chloride.

Removing Old Gutta-percha Root Canal Filling. Apply rubber dam as previously described. Heat an appropriate explorer or plugger and pass into canal. Flood pulp chamber and canal with xylol and gradually pick way into canal, removing gutta-percha with cotton-wrapped broaches.

Removing Broken Broaches from Root Canals (Prinz Dental Formulary). An attempt should always be made first to loosen the piece by some mechanical device. If this fails, a drop of 50% nitric acid is worked into the canal with a platinized gold broach. It may be followed by a second and third drop at two-minute intervals. Neutralize with sodium bicarbonate paste. Irrigate canal forcibly with water and dry carefully. A drop of concentrated iodine-potassium iodide solution (potassium iodide 2 parts, distilled water 3 parts, after complete solution add iodine crystals 2 parts) is worked into close contact with the piece of steel with the platinized gold broach. Saturate a few fibres of cotton with the same solution, pack into the canal and seal carefully with cement. The application should remain undisturbed for at least 24 hours. If the piece of broach is not completely destroyed, the treatment may be repeated. In cases where the broach protrudes through the apex in teeth that are extremely important to retain, the author recommends the removal of these instruments through the apex. The operation is performed before the canal is filled.

17 West 42nd Street.

The Substance of an Address Entitled Partial Denture Restorations*

By F. E. Roach, D.D.S., Chicago, Ill.

The question of how to construct partial dentures to meet the different requirements that come to our notice is of great importance. I do not believe it is receiving the attention it deserves. The extensive extraction of teeth that has been common for the past few years makes it necessary for us to replace the lost organs. No other part of practice involves more of our time or efforts. It is necessary that, as a profession, we should make a more profound and deeply earnest study of how to construct these substitutes. As a profession, we have been drifting with a rather indifferent attitude toward the means available for supplying these substitutes. We should have two principles in mind: to mutilate the remaining teeth as little as may be for the years that the substitute is to be worn, and to design a form of substitute which not only will be a restoration of appearance but will afford the patient the maximum of service.

How can these ends be achieved? I want to say with all the force I can command that there is no one best way. We must be eclectic if we are to serve our patients to the best advantage. The dentist who says that this or that or the other way is best for every case is a dangerous guide, no matter what the form of restoration may be. Many dentists do not believe at all in fixed bridgework but do believe in removable bridgework. Many dentists do not believe in any form of removable bridgework. Many dentists do not believe in any kind of bridgework but believe that every form of artificial substitution should be in the form of a plate. I maintain that no one of these principles should be followed to the exclusion of all the others. I am a firm believer in fixed bridgework when it is indicated, but the indications to my mind might not be indications to your mind. It is a matter of personal opinion. Personally, I employ fixed bridgework under rather severe restrictions. When it is indicated, I believe there is no better form of restoration.

In choosing a form of appliance for any case, not only should we try to be fair to the patient, but we should be very careful to be sure that we are familiar with the various types which might be supplied.

There is a place for removable bridgework. We are all familiar with its advantages. There is a place for the various kinds of attachments as means of anchoring removable bridges. Each one must be

* Delivered at the fortieth annual meeting of the Florida State Dental Society, Jacksonville, November 9, 1923.

governed in his selection of an appliance by his conception as to how it should be made and can be made and his ability to make it.

There are places for all kinds of clasps and for the various types and designs. There are places for partial plates without any clasps. Frequently we can supply the missing teeth better with an ordinary plate without any clasps. There are places for the various kinds of materials available for the construction of these appliances, a place for rubber, a place for gold, a place for aluminum. Let us not be narrow-minded in the type of restoration, and let us be liberal in the selection of materials. Our first thought is what is best for the case. But we must consider other phases of the subject, such as adaptation of these materials, the question of our ability and the question of the patient to pay.

I am considerably biased in favor of removable appliances because I have spent my life in developing a line of technic with the feeling that in the construction and supply of these restorations some form of removable appliance offers the opportunity and possibility of the greatest conservation of the natural teeth of any of the various means whereby we may supply the missing teeth. Some form of removable bridgework is indicated in a large percentage of partial restorations calling for one, two or more teeth. I believe that the use of removable bridges in a large percentage of such cases either will permit conservation of the natural teeth, during construction, or will offer equal, if not greater, longevity in the use of the teeth as compared with the various types of fixed bridgework.

On the other hand, I believe that a large percentage of these cases should be made on a partial plate type. I should define a removable bridge as a form of removable denture that occupies the place originally occupied by the natural teeth and their supporting tissues. If it occupies the space originally occupied by the teeth and their supporting tissues and also extends out into the mouth, it is a partial plate. What is the best material to employ in the construction of a removable type of appliance? Gold stands pre-eminent. Its use will be objected to on the ground that most people cannot afford gold. In the majority of cases that come to us we can use gold. I make that statement with considerable experience and observation to back it up, on the ground that a great number of people are paying for fixed bridgework made with gold. If your patient has been paying for fixed bridgework, you can make a removable appliance of gold and porcelain and make a satisfactory return for yourself and give your patient better service than in the average run of fixed bridgework cases.

Since the advent of the casting process we have made a careful study of its possibilities, as applied to partial restorations, and have so greatly reduced the time required for the construction of a case

that, so far as time is concerned, we can today make partial cases, of gold, on the fee basis formerly necessary for rubber. As a profession, we are selling our time, service, skill and knowledge. If we are going to figure on these things, we should eliminate the use of gold and rubber in combination. That is a thing I am uncompromisingly against. As an engineering proposition, it is poor engineering. Let us use the best materials that we can and offset the cost of the material by lessening the time. We are in a position to make these appliances of gold more economically or at least at not greater expense than when we made them in combination with gold clasps and gold lingual bar, with a saddle made of vulcanite.

Our ability to make removable restorations on an economical basis, employing gold as a material, is further increased by our mastery of a definite method of taking impressions in sections, taking bites in sections, casting the larger pieces in sections to eliminate or minimize the shrinkage and absorption and permit better adaptation in the mouth, and the soldering of the pieces together to get better-fitting appliances than would otherwise be possible.

If you are selling gold for fixed bridgework, you can sell it for removable appliances.

Unfortunately we have the faculty, as a profession, of riding our hobbies to death. The lingual bar has been extensively overdone. I have been an extensive user of lingual bar dentures for twenty-five years.

If we are going to use gold successfully, we must know much more about the metallurgy of gold and about its manipulation. We are not trained in the manipulation of gold as it should be handled. This is because the manipulation of gold in prosthetic procedure has been absolutely revolutionized since most of us graduated from dental colleges. The dental schools have not yet adopted the new methods of handling this material. Swaging is obsolete. It does not offer any opportunity for the dentist to develop in manipulating ability.

There are two things I should like to say about the manipulation of gold. Bear in mind that we are going to shape gold to the various cases that come to us, by the casting process. What advantage does that give? The decided advantage of using the kind of alloy that is best suited for that particular case. It enables us to select the material we want to use, with the feeling that it can be shaped to the desired form.

We have a cast which should reproduce the conditions of the surfaces, the teeth and the space in which we are to supply the teeth. On that cast we build, in wax, the design that we are to follow in metal. We have the opportunity to re-inforce it as necessary or to make it thin where thinness is indicated. Then it is cast in metal, and the metal

should reproduce the wax pattern, and you can do these things and get better adaptation than by swaging. On an equal amount of material the casting will be better designed, more rigid, and stronger if the design is correct than it could be under the swaging process.

The cast material is not as strong, for a given amount of material, as the wrought or swaged, but by proper distribution of material reinforcements are easily placed where stress is great. In making a casting we can materially change the character of the cast by the manner in which we manipulate the metal. Every dentist should be making castings for partial restorations. There is no excuse for sending these simple cases to the laboratory. Do the work yourself.

In making appliances by the casting process, it is necessary to melt the gold. This is a danger point, because every time you bring gold to a molten condition you render it susceptible to oxidation, carbonization, contamination, volatilization and shrinkage. This danger does not occur in connection with swaging to anything like the same degree.

Oxidation is the most important and one of the most injurious conditions to which we can subject the metals. It is most apt to come from the application of a low, slow heat, long continued. A mass of metal can be ruined by using an ordinary gas and air flame over a considerable period of time.

What is oxidation? It is the impregnation of that mass of metal with myriads of fine particles of the oxide of the base metals that are incorporated in that mass. When there is oxidation there is a certain amount of occluded gas and there will be spaces in the metal. The oxidizing flame is almost invariably a low-heat flame. It does not give complete combustion. To my mind there is only one torch with which you can be sure of complete combustion. It is the oxygen-acetylene torch which is made in such way that you can regulate the flame so that you can see when you have complete combustion. Under any other conditions the flame is likely to be injurious.

Oxidation and occluded gases go hand in hand to cause the metal to cast sluggishly and to make castings which are not sharp, which have not their maximum strength and which are brittle because the particles and the air spaces make points of cleavage.

Carbonization is not a very common source of danger. It is most likely to result from the use of the acetylene gas flame without oxygen. This flame exposes the metal to the danger of carbonization because platinum and palladium have a strong affinity for carbon. If you use the acetylene torch, use it with oxygen and with an adjustable flame subject to your control.

Volatilization is another danger to which metal is exposed when molten. It is a process of burning out certain elements of the alloy by subjecting the metal to excessive heat for a considerable time. Silver,

zinc and copper are readily burned out. Silver is the most susceptible of these to volatilization. Copper readily produces oxides.

Platinum and irridium also have strong affinity for silica, so that if you melt these metals in investment compounds and hold the mass at an intense heat, the mass will take up silica. Silica is very injurious to the alloy because it makes it very brittle.

Shrinkage occurs in all of our metals. It is a physical law. It can be compensated for, in our use of the metals, only by sectional construction. So we divide the construction of our larger pieces into two or three units. I never knew what it was to make successful and satisfactory gold castings until I made them in sections.

Contamination is a source of danger to purity of the metal. All of these things we have mentioned, oxidation, carbonization, volatilization, are contaminations. If you allow any other metal to come into contact with the molten metal, contamination results.

Manufacturers of dental alloys receive many complaints about their metals. The dentists write in that the metal is no good, it is brittle and clasps break so easily. I believe that almost every one of these alloys made by a reputable manufacturer is uniform and dependable. When we have bad castings, I believe it is generally our fault and not the fault of the manufacturers. They are very careful. It is hardly likely that they would make the mistake of putting out an alloy that is not standard in quality. In every instance where we have had trouble in our own laboratory and I have run the trouble to its source, I have found that it has been our own fault. I can call to mind several instances where my laboratory man had a brittle casting. He would say he knew it must be a bad piece of metal and that I should take that metal back. In one instance he had been making aluminum castings in the same crucible the day before. A very small amount of the aluminum remained in the crucible, and he melted it with the gold. The slightest trace of aluminum, tin, iron or lead will ruin an alloy. If you wish to make an experiment, take the smallest amount of aluminum that you can remove with a file and drop it into a mass of molten gold and then, when it is cool, try to roll it. It will be as brittle as glass. These are the little things that make for success or failure. Most of our trouble comes from the fact that we are not careful enough about details.

Select an alloy that you think you want to use and then keep to that standard alloy. Do not mix alloys. Each alloy has a balanced relation. Every time you change that alloy from that definite balanced relation, you are likely to deteriorate it. Do not throw in any old scraps. When you take the residue from a previous casting, it should be thoroughly clean. If you attempt to refine any of these alloys, do not use saltpeter. Saltpeter is used to eliminate the base

metal, and if you use it with the molten alloy, you will take out some of the metals and will not have the metal you think you have. If your vessels are clean, put the case in hydrofluoric acid, dissolve off the silica and investment compound, and put it in a fire-clay crucible with borax and melt it. You will then have the same character of metal as before. If you use the excess left from a previous casting to make another casting, be sure to add a considerable quantity of fresh metal.

For years I have used only one kind of gold for everything that goes into gold restorations. I feel very comfortable with it and do not want anything else in the office.

Contamination, then, is most likely to come from oxidation and from the small particles of iron in the investment material. The first thing you must look out for in handling the torch is oxidation. You must have a sufficient amount of heat to melt the mass but must guard against overheating and burning out certain metals. Do not burn your alloys up.

At present we have a device which practically eliminates all of these dangers. It is a means whereby we melt the gold in a closed, air-tight crucible. The flask is screwed into contact with the crucible so that when the gold is melted it is thrown by centrifugal force, generated by springs, into the flask and into the mould. The gold is melted at a definite temperature, controlled by a pyrometer.

I believe that centrifugal force yields the best possible casting. It has more advantages than any other force because it is the only force that is concentrated and forms a mass of metal. All we want in the machine is a spring that forces the metal in a continuous way and then spins around and sustains the pressure until crystallization has taken place. This offers fewer chances for occluded gases, with resulting spaces. With this form of force we can use larger openings for the ingress of the gold and have outlets for the egress of the air from the mold.

Saddle Cases

I know that unilateral saddles are successful in cases for which they are indicated. Do not make such appliances unless you have a firm, well-defined and fully absorbed ridge. There must also be one or two good strong teeth as anchorages. A short bite is very favorable to the construction of such an appliance since it reduces the leverage which the piece must sustain. Artificial appliances as antagonizers are favorable because the patient will not bite as hard on them as on sound natural teeth.

Such pieces must be very carefully made. The impression-taking must be carefully performed. The accuracy must be such that there is proper relation between the clasps and the saddle, to give proper

coordination. If the relations are not right, there will be great leverage upon the anchor teeth.

In connection with extension saddle pieces of all kinds I hope to be able to show that there are very few such pieces that require any kind of stress breaker. I am opposed to stress breakers of any type. The original ball and socket device was designed to secure stress breakage. What is needed, instead of stress breakage, is accuracy of construction.

If you are to use a stress breaker, use a definite means, not a bar extending from some part of the piece to the clasp. That is not an adequate stress breaker, because there is a spring tension, and if there is the slightest amount of pressure from a light or heavy strain, it is not a stress breaker.

A class of cases where a stress breaker is indicated is the kind in which we have teeth so badly off parallel that we cannot parallel them and use a clasp plate. I have not seen a case for six years where I could not extend clasps on the sides of the teeth. In the construction of such a case it is essential to place the clasps, with reference to the other teeth which you are going to clasp, so that the appliance will go to place without coming into contact with the surfaces that are not parallel. The solution of the difficulty in such cases is a matter of study and accuracy of design.

What about the cases in which we have a soft, spongy or narrow cartilaginous ridge that moves about everywhere so that there is no definite place for the saddle to rest? Perhaps a stress breaker would be a help in those cases. I do not know what to do with those cases. In many of them I make a juggler's job and let them juggle. We must either do that or make some simple form of half-round wire clasp with no occlusal rest. In those cases it is ridiculous to make a rigid clasp because it will dislodge the teeth in a short time.

If removable bridgework is to compete with fixed bridgework we must make these cases rigid. We must make cast clasps properly. No other form of appliance is giving as much satisfaction as cast clasps. I am making them all the time, and have made them since 1907, but during that time there have been many discouragements. I have overcome the failures and eliminated almost entirely the causes of trouble with cast clasps. The failures have been overcome by using a standardized technic in their construction, by using them only for patients who will live up to my instructions, and by insisting upon their being kept clean by the patient.

Reciprocity

By S. A. Allen, D.D.S., Glendale, Cal.

Reciprocity—Interchange: equal mutual rights or benefits to be yielded or enjoyed. (From an old book of mine entitled "Dictionary.")

A Dental Ode

The road to "Reciprocity" is strewn with divers bones and blasted hopes, a thousand plans and notions left upon its rocky slopes; late pilgrims who have gone that way with ideas for promotion can get no further than a place called the "Annual Commotion."

Orations, editorials, papers, magazine articles, motions, discussions, conversations, type, paper, ink and air have been used on the poor old subject of reciprocity. Committees have come and gone. Gavels have cracked to maintain order in meetings which, after the noise ceased, ended like most attempts—in adjournments.

We will now quote the most quoted of quotes whenever the subject of National Dental Reciprocity is being given the air, to wit: "When a dentist is licensed to practice in one state, why is he not good enough to practice in any other state, without further examination?"

From this flying start we may now proceed along any one of the numerous and well-worn grooves common to the discussion or argument. Let us do neither. Rather than get all "het up" sawing cords of atmosphere, let us come to a full stop, allow the engine to cool and try the thing in low.

Question. When a dentist is licensed to practice in one state, why is he not good enough to practice in any other state, without further examination? *Answer.* Because the majority of dentists in the United States have not said that he is and that he might. The majority of dentists who are active in practice, and dental welfare generally, are not moving around from state to state; they are not sufficiently concerned. The smaller number, those who are moving, or would be —in other words, the most interested ones—have not presented a plan which is at once workable and wholly American in its majority rule phase. Most of the ideas proposed have failed to take root.

Question. How is National Reciprocity to be brought about? *Answer.* When state dental societies will see to it that the members of their respective examining boards send representatives to the American Association of Dental Examiners meetings instructed to favor reciprocity. Why the American Association of Dental Examiners? Because the membership of that organization is entirely composed of state-board men, most proper of all to draft and subsequently supervise the National Dental Reciprocal Act or Agreement.

True, this very body has put the quietus on more reciprocal motions than you can shake a stick at, but if enough state dental societies instruct their dental boards to send delegates to the American Association of Dental Examiners favoring national reciprocity, then and only then will a beginning be made.

And let me impress this thought. No one has as yet submitted the perfect plan or draft of the law under which National Reciprocity may be established. In order that a comprehensive plan be created we must *first* put the matter into the hands of those favorable and competent, they to draft a *proposed* law, which is to be *submitted* to the different state dental societies for their approval or rejection. This then will be as it should be—an optional proposition. Some states will not subscribe to national reciprocity, but the beginning must be made with those states wanting it *now*.

Question. Will National Reciprocity eliminate state dental boards? Will it make a bunch of dummies of state dental boards? *Answer.* No, never. No, there will always be plenty of work for state boards, both legal and dental.

Question. Will there still be reason to continue the American Association of Dental Examiners? *Answer.* Yes, more than ever. Out of this organization should come the new law, its interpretation, application and any future alteration to meet ever-changing needs of our growing profession.

Question. Will those states which subscribe to National Reciprocity have to change their present state dental laws? *Answer.* Some will and some may not. Those states now having recognition for the Nashville Resolution Contract Agreement could, it seems to me, adapt that to National Reciprocity if they would simply legislate recognition of those candidates who shall qualify under the National Reciprocal Act.

At the Los Angeles meeting of the American Dental Association there was started a movement which had for its object the unification of all state dental laws. This is good and will result in elevating dental standards. But if this is accepted by the dental profession as a means to National Reciprocity, it will be years and years in fulfillment, for it would depend on radical changes in nearly all state laws, and legislation is difficult and many times dangerous if undertaken on too extensive a scale. National Reciprocity *must* be made an issue in state dental societies, and state dental boards *must* be instructed by their societies to send delegates who are favorable to the American Association of Dental Examiners' meetings.

So far in this article we have not referred to the possible plan under which this nation-wide exchange of license might be operated. I have a plan but I am in favor of several men working out the act or agreement. Most important of all is to start action in favor and get

the matter into hands where, when a plan is arrived at, it will have the definite and worth-while value and character to merit consideration by the dental profession.

The steps thus far which it is intended shall lead up to the drafting of the National Reciprocal Law are: majority favor in state dental societies; state dental societies' instruction to their respective state dental examining boards to send delegates to the American Association of Dental Examiners likewise favorable; majority in the last-named organization to create the committee who shall draft the law and bring it before that body for further consideration. Then when the proposed plan is completed and it represents the best plan for National Dental Reciprocity which it is possible for them to conceive, let the plan be printed and distributed to all state societies, boards, dental magazines, and to all who desire a copy, for a full opportunity for study. If then, when the American Association of Dental Examiners meets, it is decided that no changes need be made—or, if so, the changes are made—the plan is ready for any states who so desire to subscribe and legislate in that manner which will *permit* their board to recognize and take part in National Reciprocity.

143 North Brand Boulevard.

Oldest Dentist at Canandaigua Dies in His 78th Year

Dr. Cornelius J. Andruss, 78 years old, died at the Canandaigua Health Home, May 22, after a long period of ill health. Dr. Andruss was Canandaigua's oldest dentist and had lived here for half a century. He was born in Canadice on October 7, 1845.

In 1870 he commenced the study of dentistry with Dr. A. G. Coleman, in Canandaigua, and also studied at the Philadelphia Dental College, graduating in 1877. From that time he has been engaged in the practice of his profession in Canandaigua.

He was a member of the Seventh District Dental Society, Canandaigua Dental Society, and Canandaigua Masonic lodge. He retired from active practice about a year ago.

Dr. Andruss served as a member of the village board of trustees and as president of the village of Canandaigua.

He is survived by his wife, formerly Miss Maria Bailey, of Spencerport, whom he married in 1872. Bearers were members of the Canandaigua Dental Society and burial was in Woodlawn cemetery.

Case II Cavities. Waxes and Patterns*

By R. H. Volland, D.D.S., Iowa City, Iowa

(This report is neither official nor complete. It represents the impressions made by the essayist on one in the audience.)

In his illustrated talk the essayist confined himself to a consideration of Class II cavities and the preparation of the waxes for the making of gold inlays. The types of cavities were the mesio-occlusal on bicuspids and molars, and m.o.d. preparations for these teeth.

Three essentials in the making of good inlays are: cavity outline, adaptation of material to the walls of the cavity, and the final shaping and finishing of the restoration. Unless these fundamentals are strictly followed we cannot expect consistent success in our work.

The gold foil filling and the gold inlay demand identical cavity form. Merely omit the undercuts for the inlay. The same principles of extension for prevention must be followed, and due consideration given to resistance form.

The importance of proper cavity preparation in order to retain the inlay cannot be too greatly emphasized. The inlay should be able to retain itself mechanically and be capable of being withdrawn in only one direction. The margins should be finished off smooth. This is best accomplished by means of chisels, a planing motion being used.

In observing the occlusion it may sometimes be noted that great stress will have to be borne by one of the cusps. In order to prevent it from breaking away, the cusp is bevelled off, and the inlay extended so as to cover it. Bevelling the cusp is better practice than grinding it flat across the top; less gold shows, and equal strength and protection are secured. In the preparation of m.o.d. cavities for bicuspids there is grave danger of the buccal or lingual cusp fracturing away. It is advisable to prepare the cavity so that one wall may be particularly strong, usually the facial.

The proper manipulation of the wax is essential in order to obtain uniform results. The wax pattern is the basis of inlay work. It must be kept in mind that wax expands, contracts, and is elastic, and it is important, therefore, that when the wax has been pressed home in the cavity, it must be fixed. This fixing of the wax tends to maintain it in the finished form. A stream of hot water is directed over the wax pattern, washing away the shavings. Gradually this water assumes room temperature, which is proper for the fixing of the wax.

For making the pattern a small stick of wax is preferable to the familiar little cone. One end is softened over the alcohol flame and

* Delivered before the First District Dental Society, New York, March 3, 1924.

pressed into the cavity while the hard portion of the wax acts as a plunger. Warm water is directed over the wax with an all-metal syringe. The cusps are first carved, the wax being firmly held in place by the wedging of the surplus against the adjoining teeth. The wax is gradually trimmed to shape. No overhang is desired in the finished inlay, so the wax is carved flush with the cavity margins. The overhang on inlays is frequently the cause of failure to go to place. Great care should be exercised in the finishing of the wax pattern, for it is poor policy to depend upon correcting the gold inlay by grinding. Of particular importance is the handling of the wax at the gingival margin, as this is the most frequent point of failure. The indirect method of inlay preparation affords one distinct advantage in that the wax can be carried positively to the gingival margin and finished perfectly.

Care should be taken in removing the wax pattern, as there is grave danger of distortion of the wax at this time. The favored method is to imbed a heated sprue into the wax pattern and permit it to cool, when it can be easily removed.

After casting, the inlay is examined for nodules due to air bubbles. The part of the inlay in contact with the pulpal floor should be smoothed off to the thickness of a sheet of paper. The inlay will then seat itself with no difficulty. In the final polishing, the contact point is sometimes deliberately ground away and then restored with a bit of solder.

Facts About Edentulous Cases

By B. L. Higgins, D.M.D., Boston, Mass.

From personal investigation I find there are about two hundred and fifty full upper and lower denture cases handled by the dental laboratories in and around Boston every month. This does not include cases completed by the dentists who do their own laboratory work in this line. Eighty-five per cent of the impressions for this work are taken with the old-fashioned impression trays with just plaster or compound, no attention whatsoever being given to determining the correct outline or border of the denture. Thirty per cent of these cases are completed with just an ordinary mush bite, with no knowledge of proper height of bite rims for individual cases or correct amount of interocclusal space.

The instructions for selection of teeth for about sixty per cent of this work direct that a large, medium or small tooth be used instead of designating whether the case should require a square, tapering or ovoid type along with the correct form and size. So far as I am able to

ascertain, only two per cent of the teeth are set up with any idea of anatomical articulation.

We have here two of the finest dental colleges in the country. Both of these institutions have very good instructors in this branch of prosthetic dentistry, and they are doing their utmost to give the students a good knowledge of the advanced methods of full upper and lower denture construction. It is the older practitioner who should awaken to the dire needs of higher professional skill in the construction of full upper and lower cases for this class of his practice. He owes it to himself and to the economic life and worth of those individuals who are required to wear artificial restorations in his community.

711 Boylston Street.

The Society for Cinematographic Instruction in Medicine and Surgery

The Society for Cinematographic Instruction in Medicine and Surgery, with headquarters at 105 West 73rd Street, New York City, announces that after two years' intensive experimentation with various cinematographic technicalities it is now ready to proceed with its full program.

"It has been necessary to make a lengthy and accurate test of cameras and of various methods for filming, developing and printing of films, which procedure has consumed considerable time and money," James S. Edlin, M.D., President of the Society, states. "We now have in charge of our film production a man who has had many years' experience in the production and distribution of educational and pedagogical films—Mr. Samuel A. Bloch. Mr. Bloch organized the Educational Department for one of the most prominent film companies, and has produced educational and technical motion pictures independently. He is both an educator and a trained motion picture executive."

The Society is now ideally equipped, Dr. Edlin says, to produce films for the medical, surgical, dental, drug and allied professions, and invites correspondence from all those interested in membership in the Society, as well as those desirous of securing excellent and truthful motion pictures.

Among the cinemas already produced by the Society are the following: A Study of the Motor Control of Gait and Posture, from the Neurological Division of the Montefiore Hospital, New York City, S. P. Goodhart, M.D., Director, and a Study of Diseases of the Nervous System, from the Neurological Division (Cornell College) of Bellevue

Hospital, New York City, Foster Kennedy, M.D., Visiting Physician in Charge, both produced under the direction of Walter M. Kraus, M.D.; Root Resection, Adolph Berger, D.D.S., Oral Surgeon, Vanderbilt Clinic, New York City; Presentation of Surgical Cases from the Hospital for the Ruptured and Crippled, New York City, under the direction of Charlton Wallace, M.D., Associate Surgeon and Chief of Clinic.

Transportation to the American Dental Association Meeting at Dallas, Texas

A rate of one and one-half fare on the Round trip Identification Certificate Plan has been authorized by practically all of the railroads of the United States.

These certificates will be mailed to each member of the Association in ample time for the meeting. When properly filled out and presented to the local agent, members and dependent members of their families may purchase round-trip tickets good, going, from November 6-12, inclusive, with return limit November 20, 1924. For Pacific Coast points date of sale is one day earlier and return one day later.

For the convenience of members a special train has been arranged via the Illinois Central, Missouri Pacific and Texas & Pacific. Passengers from territory tributary to Chicago will arrive in time to leave on special at 3:00 P. M. on November 7th. Passengers via St. Louis will arrive there in time to leave on special at 10:30 P. M. on November 7th. The special is scheduled to arrive in Little Rock, Arkansas, at 8:00 A. M. on Saturday, November 8th. The day will be divided between Little Rock and Hot Springs, leaving that night and arriving in Dallas the following morning.

The present plan includes an automobile ride through Little Rock followed by a sixty-mile motor trip through the Ozarks to Hot Springs. The Hot Springs Business Man's League expects to entertain the party with a trip about the city and vicinity. Complimentary use of the bath houses and golf course in included.

Old Mexico: The Transportation Committee is working on a ten-days' or two-weeks' tour of Old Mexico following the Dallas convention. Details of this trip will be covered in subsequent issues.

Transportation Committee A. D. A.

D. C. Bacon, *Chairman.*

Three Million Dollar Gift Provides New Building for Northwestern University Dental School

Three million dollars given by Mrs. A. Montgomery Ward to Northwestern University, for the construction of a large Dental-Medical Center upon the new urban campus at Lake Shore Drive and Chicago Avenue, will provide for the Dental School quarters for five hundred undergraduate and one hundred graduate students in dentistry in a building of the most modern design.

Northwestern University Dental School is by no means the sole benefactor on this occasion. The announcement of such a magnificent gift to dental education is bound to have a far-reaching effect, which can hardly be overestimated. Large contributions for general and for medical education have been quite the order of the day for some time. Dental education, per se, has not been the recipient of any substantial gifts. The Forsyth Clinic, at Boston, and the Eastman Clinic, in Rochester, have their educational phase but are not classified as dental schools. The portion of the Montgomery Ward Memorial to be devoted to the Dental School is the largest gift which has ever been made directly for dental education. This striking recognition of the claims of dentistry for liberal support will not pass unnoticed.

The deed of gift provides for the construction of a Medical Center, including dentistry, located upon McKinlock Memorial Campus and for the equipment thereof, two and one-half million dollars for endowment thereof, of which the income only is to be expended for the maintenance of the building, one-half million dollars.

"The number of students in the undergraduate Dental School of Northwestern University will be limited to five hundred," said Dr. Black, "but provision also will be made for one hundred students in the Graduate School. This will afford opportunity for most thorough graduate instruction leading to a Master's degree and also postgraduate courses occupying from a few to ten weeks for such practitioners as will wish to brush up on any particular subject. The teaching in the Graduate Dental Department will be primarily for training teachers and such persons who expect to enter special lines of practice, such as Orthodontia and Oral Surgery."

Dean Black stressed another improvement to be made possible by Mrs. Ward's generosity—the Children's Dental Clinic. "One of the outstanding features of the work of our school the past year," he said, "has been our clinic for poor children, which has performed about 15,000 operations, mostly for poor children of the public schools who have been brought to the clinic by Health Department Nurses. This is

the first such clinic to have been established in connection with the Dental School and serves the double purpose of training students in the care of children and of rendering a greatly needed community service. The present children's clinic has but fifteen chairs; in the new building we hope to have sixty chairs devoted to children's service, thus providing for more ample teaching and a corresponding increase in the number of children who may be cared for.

"The new building also will have ample provision for dental research which will be a part of the work of the Graduate Department. This school has maintained a small research department for many years, and it is hoped that sufficient funds will be provided for additional workers in the field.

"The new gift will enable the Dental School properly to house its library and museum, which have by far the largest and finest dental collections in the world. Dr. Bebb, curator of the museum, is now in Europe on six months' leave, making collections for this department. The books and collections date back to the sixteenth century and are almost priceless from a dental standpoint. They have been in constant danger of destruction by fire during all of the years they have been housed in our present building and the new building will insure their permanent preservation."

Montgomery Ward, after whom the great new Medical Center is to be named, was one of the most progressive of Chicago business men. He died about ten years ago and his friends say of him that the "Chicago Plan" for the improvement of Chicago never would have been possible if Mr. Ward had not over many strenuous years made a single-handed and courageous battle for the preservation of Chicago's lake-front.

The Story of Fused Quartz

By C. H. Huntley, Schenectady, N. Y.

(EDITOR'S NOTE.—This abstract is printed for the benefit of those of our readers who have not had an opportunity to read of the wonders of fused quartz.)

When E. R. Berry, assistant director of the Thomson Research Laboratory of the General Electric Company at West Lynn, Mass., gave to the scientific world and the general public the results of his ten years of costly experimentation with the production of clear fused quartz, he in all probability opened the door as nothing else could to the rapid development of, and research in, the use of ultra-violet rays. This unbelievably clear quartz—nature's own glass amazingly purified and made workable—may well prove, in the belief of medical, chemical and biological authorities, to be the long-sought key to previously unlocked secrets of health.

Fused quartz, formerly produced only in quantities that made it many times as costly as gold by weight, has many unusual qualities, which suggest a variety of uses, now that it is on the point of becoming easily available. But the quality which stands out above the others, the property that makes it a scientific key, is that of transmitting ultra-violet rays. Its importance, therefore, is certain to increase with the effective employment of these rays.

That, however, savors a bit of putting the cart before the horse, for fused quartz, on large scale production, is expected to lead directly to this same beneficial employment, both artificially and naturally, of the chemical rays which in sunlight produce both sunburn and bodily vigor.

Talks with scientists now engaged in using fused quartz to further ultra-violet rays experiments show, despite their caution of utterance, that they hope for, and even expect, remarkable results.

Having virtually finished his work of producing in quantity, in practicable form and at reasonable cost this prized substance, Mr. Berry has turned his attention to its use in the healing and disease-preventive fields. He has enlisted the services of two eminent scientists and of the institutions with which they are connected. These are Dr. Clarence C. Little, president of the University of Maine at Orono, Me., a leading biologist, and Dr. W. T. Bovie, professor of biophysics at Harvard Medical School, Boston, and an officer of the American Chemical Society. Other scientists and institutions, including a famous hospital which will build a sun-room lighted through the new "glass," are following developments with intense interest.

Virtually all the experiments, either already afoot or prospective,

will depend upon the fact that ultra-violet rays are excluded by common window glass but pass easily through fused quartz. Hence, significantly enough, there is planned on the grounds of Harvard University a greenhouse glassed with quartz in which will be determined certain effects of the rays upon growing plants, always, of course, with a view to applying any knowledge thus gained to improving human health or preventing human disease.

With a like object experiments are to be made in the University of Maine laboratories, where environmental conditions are considered especially favorable. It is expected that new light will be gained on the effects of ultra-violet rays on poultry, with reference to disease and fertility, and upon mice, inbred to the 70th generation.

President Little says: "There are opened possibilities of studying the effect of ultra-violet rays on the fundamental instinct of migration and hibernation, and upon the inherited characters of animals and plants. It will be possible also to compare the effect of ultra-violet and x-rays on identical material.

"Also, the fact that strains of mice at the university's laboratory have long been used for research with cancer lays open a field of prospective value in the relation between ultra-violet rays and biology and medicine."

All concerned in these developments have painstakingly avoided raising false hopes regarding the possibilities of curing or preventing certain stubborn diseases, but one vista which is opened encourages the hope that infant mortality, particularly in crowded cities, may be further reduced. In this case the insidious enemy is rickets.

This point, recently developed on both sides of the Atlantic with the revelation of astonishing facts, was discussed by Dr. Bovie.

"We all know that exclusion of light results in the blanching of plants," said Dr. Bovie. "They may become more succulent for table purposes, but their tissues are not stout and well developed. This is because calcium and phosphorous salts are not deposited in the absence of the ultra-violet rays in sunlight.

"Similarly, if babies are submitted to the same absence of sunlight, or of ultra-violet rays, their bones do not grow—hence rickets. This is a common disease—how common is not generally realized. It is perhaps little realized, either, that it is prevalent among the babies of the well-to-do who are not allowed to play in the streets.

"Remember that playing in the sun, behind window glass, does not expose them to these beneficial rays. However, quartz windows, which do admit these rays, are now entirely within the bounds of possibility as a result of Mr. Berry's work.

"But, to get back to rickets. Autopsies on babies in Dresden showed that of those who were born in the fall, and died in the spring,

96 per cent had rickets. Of those who were born in the spring and died in the fall only a very small percentage had rickets. The babies born in the spring were outdoors in the sunlight during the summer."

Like research by Dr. Alfred E. Hess of New York is said to have justified the statement that three out of four young children in city blocks have rickets, which may appear as only a mild form of bone trouble, or may lead (aside from ordinary manifestations) to slight deformities, grippe or pneumonia. He is quoted as having determined that it is much more prevalent in winter, that sunshine is the preventive and the cure, and that tubes for mercury-vapor lamps for therapeutic use (artificial application of the curative rays) must be made of quartz, which is transparent to these short rays.

The same possibility was expanded by Dr. Bovie, as follows: "If we can provide artificial illuminants that will emit ultra-violet rays, we won't have to depend on the sun, which is so uncertain in winter. We can get the sun's effects on cloudy days by using quartz bulbs or tubes with incandescent lights."

What follows is not the imaginative flight of a lay writer, but the sober statement of the scientific seer. "Certain foods," he continued, "act sympathetically to sunlight. It is not inconceivable that we could light our restaurants with sources of ultra-violet light, so that while partaking of foods rich in phosphorus and calcium we could partake of light energy that would enable us to utilize these salts in normal manner.

"There are diseases other than rickets which are due to faulty metabolism—the 'machine gun sneeze' is one. Such diseases might be alleviated by feeding calcium lactate and using ultra-violet light in connection with it.

"Altogether, the availability of quartz suggests very interesting possibilities. With Dr. Little we are undertaking an investigation of the effects of the ultra-violet rays on the calcium metabolism of milch cows. The object, of course, is to see if the rays can have any effect on the milk we feed our babies.

"It is not improbable. Other animals feel the effects of the lack of these rays. Deep-sea fish do not produce bones, though living in water prodigally saturated with calcium salts. Fish of the same species living in the upper water, where the sun rays strike through, have bones in profusion.

"Likewise, poultrymen in the north are unable to grow chickens for early market satisfactorily. In the darkness of the long winter the chickens suffer from 'weak legs.' This is nothing but rickets, and ultra-violet rays cure them. Hughes of the Kansas Experiment Station exposed hens to ultra-violet rays 10 minutes a day and doubled their egg production. Further, the weight of the individual egg was increased 20 per cent.

"I am personally convinced that pine trees in our forests, deprived of light, suffer from rickets, just as humans do. We shall hang ultra-violet quartz lights about the woods in the course of our experiments and see what the result is."

Employment of the ultra-violet rays is so far from new that, as Dr. Bovie points out, the ancient Egyptians, Romans and Greeks found benefit in sun baths, yet their chemical nature was not known. Their identification and control are of comparatively recent accomplishment, dating virtually from the time of discovery in the last half of the last century of the bacterial origin of disease. Charcot, Finsen, Downs and Blunt made a beginning.

Finsen in Copenhagen succeeded in curing the skin form of tuberculosis and in showing beneficial effects in the treatment of smallpox. Winning the Nobel Prize in 1893, he gave his entire gains to founding a tuberculosis hospital and in disseminating knowledge of the ultra-violet rays' properties.

"In America, however, progress has been retarded, and some such event as the production of this quartz has been needed to redirect attention to the subject," said Dr. Bovie. "American doctors did not understand the scientific side of ultra-violet therapy. Its use developed into a bad form of quackery. Apparatus called ultra-violet lamps which did not emit any of the rays Finsen relied upon were used. The result has been that many reputable physicians in America have refused to have anything to do with it."

It is nevertheless a fact that treatment by these rays, using hand-wrought quartz "applicators" and lamp tubes, costly though they have been, has been regularly given to combat certain diseases. It is significant, too, that scores of laboratories all over the country adequately equipped for such work have been experimenting without cease on the ultra-violet problem. The scientific world seems convinced there is "something big" just around the corner.

If the new quartz merely makes it possible eventually for the average home to have the essence of sunlight, artificial or natural, the year round, bad weather and good, its meaning in health to countless thousands who, "grown under glass," have been depriving themselves of the most beneficial qualities of sunlight, heat excepted, is likely to prove measureless. The action of the ultra-violet rays apparently is already well enough understood and gauged to make that prediction safe. Indoor living, or residence in regions overcast for long periods, need not be so hazardous in the future.

But, aside from this most beguiling phase of Mr. Berry's hard-won accomplishment, the substance he has produced so dexterously is in itself fascinating. It looks like glass, surpassingly colorless and transparent, and is about as easily fractured as glass. But its other proper-

ties—long known to be possessed by quartz, but heightened by the new process—are quite different. As these become apparent, uses suggest themselves to the limit of the beholder's imagination and scientific knowledge.

To begin with, it is the most transparent substance yet known to man. Light rays will pass through a solid rod of it a bit more than a yard in length with only 8 per cent loss. The best optical glass loses 35 per cent, ordinary glass 65.

It has similar efficiency in transmitting heat. A flame may be applied at one end and the tube held in the hand. The surface is cool, but touch your finger to the far end and you receive a burn.

The most spectacular test, however, is in transmitting light around a corner with a bent rod or ribbon. Mr. Berry demonstrated this with a long rod of fused quartz that had eight clearly defined bends, which amounted to nearly three complete circles. Are light rays really straight? This property alone suggests uses in the hospital and operating room to which ordinary glass, that transmits light feebly in this manner and with color changes, could not be put. It carries the electric bulb "right inside," while leaving it outside.

Though light pours through as if siphoned with a hose, more astonishing still is the lack of "changeability"—to dodge the scientific phrases—of clear fused quartz. Heat it to incandescence, beyond the melting point of gold or platinum, then plunge it into ice water. It neither cracks nor melts as would glass under the intense heat or the violent change of temperature. This means that wherever a transparent substance is needed to be used in heat or in sharply varying temperatures, fused quartz will have no peer. It also means—for it endures this test because it contracts and expands only infinitesimally—that it probably will become the chosen substance for standard of measurement all over the world.

A bell or goblet of fused quartz rings melodiously with a pitch that can be altered by shaping and sizing. Once fixed, temperature does not change it. So stable is it that Mr. Berry declares a pitch thus recorded can be carried down the generations, which makes the tuning fork of metal look like a mere itinerant.

Despite these stable qualities, the clear fused quartz can be easily worked. It is forced downward out of the greatest vacuum electric furnace in the world and appears as perfectly smooth rods, tubes, ribbons or ingots. It can be molded into any shape. It can be cast into great disc blanks, which easily take a lens polish.

"Those are coarse," remarked Mr. Berry. "We have made some tubes so small that, once dropped on the floor, they are lost for good. Only a microscope could tell you they were tubes and not rods."

Astronomical lenses of the quartz are also a practical certainty, for

with them there is expected to be no distortion, whether the temperature during the observations is 110 in the shade or 10 below. This slight expansion and contraction—1/16 that of platinum, the previous record holder—also means that all previous standard of thermometer accuracy can now be surpassed.

Though Mr. Berry sees a variety of potential uses not already made for the clear quartz crystal, of which he has in his laboratory a thousand times as much as exists elsewhere in the world, it is in its possible meaning to human health and to the furthering of experiments that will bring a diminution of human suffering and inefficiency that he takes greatest pleasure. Regarding these possibilities he declines to be quoted, however, on the plea that he is not a medical man. But, if the views of other scientists are to be accepted, Mr. Berry seems likely in time to be regarded as the man who made possible "perpetual sunshine," with its corollary of a layer of sunburn on top and many layers of health underneath, winter and summer alike.

Mr. Berry—he is commonly hailed as "Professor" or "Doctor" but is neither—is unassuming as a scientist and as an executive. His home was in Lynn and he exercised his bent for two years, obscurely working for the General Electric Company. He then took a scientific course at the University of Maine and was graduated in 1904 with a B.S. degree. In 1907 he won his M.S.

He worked for a time in a hydro-electric plant in Maine, then started for Niagara Falls to another job by way of Lynn. He never reached Niagara. A place was open in the General Electric Laboratory, and he has been there ever since.

At heart an experimental scientist, his great triumph came only a few days ago, when he read before the 45th meeting of the American Electro-Chemical Society at Philadelphia a paper giving in full detail the result of his long labor in taking "transparent" quartz crystals—Nature's best—and rendering them amorphous instead of crystalline, free from impurities, and wholly adaptable to men's use.

DENTAL LAWS

Summary of Dental License Requirements Throughout the World

By Alphonso Irwin, D.D.S., Camden, N. J.

MARYLAND, U. S. A.

The dental laws of Maryland are dated March 1, 1884, April 7, 1886, April 4, 1896, June 1, 1920. The English language, dental supervision, registration and examination are required; Examination fee, $20.00.

Maryland State Board of Dental Examiners

President, H. A. Wilson, Baltimore; Secretary, T. L. McCarriar, 1822 N. Charles St., Baltimore, Md.; D. G. Everhart, Frederick; J. S. Hopkins, Belair; C. V. Hayden, Leonardstown; J. Ben Robinson, Baltimore, Maryland.

Rules for Examination

1. The semi-annual examination shall begin at 9.00 a. m., sharp, at a date in June and November, to be fixed by the Board. All applicants must be present at the beginning of each session.

2. All persons desiring to take an examination must submit their Diplomas or Dean's certificates and file their application with the Secretary prior to the meeting of the Board.

3. The Board reserves the right to dismiss any applicant who may be detected in using or attempting to use any unfair assistance for himself or for another applicant.

4. Applicants are not allowed to leave the room nor move about in the room during an examination without permission from a member of the Board.

5. Neatness, correct spelling, legibility of writing, and good use of English will be expected of all candidates.

6. Candidates must write on one side of the paper only, numbering their answers to correspond to the number of the questions, and placing their names, home addresses and colleges of graduation at the top of the first page.

7. All stationery used in the examinations is furnished by the Board.

8. The written examinations shall comprise the following subjects: Anatomy, Physiology and Histology, Chemistry and Bac-

teriology, Oral Surgery, Anesthesia, Operative and Prosthetic Dentistry, Pathology, Therapeutics, Materia Medica, Orthodontia and Crown and Bridge Work.

Returns of all examinations are issued by the Secretary as soon as possible after the meetings, usually in 10 days or two weeks.

Clinical Requirements

Operative.—Each applicant is required to prepare cavities and insert one gold and one amalgam filling, and may be called upon to perform any other operative procedure at the discretion of the Examiner. Applicants must be provided with patient and all necessary operative materials and instruments, including engine. The operations being performed between 2 and 5 o'clock each day.

The prosthetic requirements are the submission of a metal plate or bridge of not less than four (4) crowns—two of which shall be of porcelain, the abutments being a molar and a bicuspid—the case submitted on the first day of the examination, and invested and soldered in the presence of the Board.

A general average of 75% must be obtained by all candidates who pass a successful examination.

A provision of the new Dental Practice Act permits Students of Dentistry at a recognized College of Dentistry, who have completed their third year of study and who may be certified by the Dean of the College at which they are in attendance as having satisfactorily completed certain subjects which are included in the examination given by the Board, may, on application, be admitted by said Board to its regular examination upon such subjects, and upon passing such examinations, shall be deemed to have absolved the requirements of the Board in such subjects. A fee of $20.00 being paid by the applicant, shall entitle him or her to take the balance of the examination after graduation without further charge.

Application blanks and all information will be furnished by the Secretary to whom all candidates should apply.

Verified January 16, 1923.

T. L. McCarriar, *Secretary,*
1822 North Charles Street,
Baltimore, Md.

MARYLAND STATE DENTAL LAW

Effective June 1, 1920. Section IV. 24th Line—Abstract

"The Board may, in its discretion, register without examination and issue a certificate (permanently or until the next regular meeting of the Board) to any person who has been graduated and admitted to

the degree of Doctor of Dental Surgery or equivalent degree by any university or college incorporated and authorized to grant such degree by the laws of the United States, or any of its territories, districts or possessions, *or by the laws of any State of the United States,* and who has been duly registered and licensed to practise dentistry by a Board of Dental Examiners created and existing under the laws of the United States, or any of its territories, districts or possessions, or under the laws of any State of the United States."

T. L. McCarriar, *Secy.-Treas.,*
1822 N. Charles St., Baltimore, Md.

MASSACHUSETTS, U. S. A.

Board of Dental Examiners

President, Carl R. Lindstrom, 520 Beacon Street, Boston, Mass.; Ralph R. Cunningham, 307 Main Street, Springfield; William K. Flynn, 474A Broadway, South Boston; Geo. A. Thatcher, 101 Main Street, Brockton, Mass.; Secretary, J. N. Carriere, 352 Main Street, Fitchburg, Mass.

The dental laws are dated April 1, 1887, 1903, 1905, 1908, 1915, 1917, 1920, March 31, 1921.

The English language, dental supervision, examination and registration are required. March, June and December examinations usually are held in the State House at Boston, fee $25. Time and details are announced prior to the meeting. If a third examination is necessary, $10.00 additional must be paid.

An accredited High School, and four years' course dental diploma are required from a recognized dental school.

The theoretical subjects of the examination consist of those taught in a recognized dental college. These and the practical tests are selected and announced just prior to the meeting of the Board of Dental Examiners. The law permits the interchange of dental licenses, but "no agreements" have been announced.

Dental Hygienists are examined, and if successful in passing the required tests, licensed; fee $10.00.

Registration of both dentists and dental hygienists every year in January, with the Board. Also for each and every change of place; blanks for the same are furnished by the Secretary upon request. Under a statutory provision in Section 5 of the dental law, four year dental students may be examined.

J. N. Carriere, Secy.-Treas., 352 Main St., Fitchburg, Mass.

Verified March 27, 1924.

Massachusetts Board of Dental Examiners. Requirements for Applicants and Rules Governing Examinations

Every applicant for license must be twenty-one years of age or over, of good moral character, and a graduate from a dental college recognized by this Board.

Note.—The Board may, in its discretion, examine an applicant who has spent four years in such a college and has passed examinations of the first, second and third years, provided he furnishes reasons for his not having obtained a diploma and such reasons be accepted by formal vote of the Board as satisfactory, or who fulfills the requirements for a reciprocal examination as set forth in the General Laws of 1920 or amendments thereto.

He must fill out and present an application blank to the Secretary of the Board, together with a certified check or money order for twenty-five dollars ($25) drawn to the order of the Massachusetts Board of Dental Examiners, at least ten days before the date on which the examinations are to begin.

Application blanks may be obtained from the office of the Secretary of the Board, State House, Boston, Mass.

Applicants who fail in the first examination are entitled to one re-examination free of charge, but for each subsequent examination, a fee of ten dollars ($10) is required.

Temporary licenses are not granted.

Practical Examinations

Operative. Each applicant must bring a patient who has at least two approximal cavities, and who is sixteen years of age or over. Applicants must come provided with the necessary instruments, filling materials and appliances. Operating equipment (chairs, tables, etc.), will be provided by the Dental College Infirmary where examinations are held.

Have patient in chair ready for assignment of work by 9.30 a. m.

The Board in every instance assigns the operation. Partially prepared cavities are not accepted.

A cavity when prepared must be shown to at least two examiners, including the one who assigned it. The finished operation with the rubber dam left in position must be examined by the same examiners who passed on the preparation.

The examination may consist of gold, amalgam, or silicate fillings, inlays or prophylaxis and will positively be limited to four (4) hours.

Practical Prosthetic Dentistry. The applicant must provide his own patient and all instruments and materials.

The Prosthetic Examination will begin promptly at 9.30. It may

consist of either a banded crown, a bridge, a partial or full vulcanite plate. Every step must be examined and marked by the same examiner.

(*Note*)—Applicant may present patient with practical case, constructed in dental school without the help of an instructor, provided he presents at the same time affidavits to that effect, signed by the Professor in charge of the department.

Theoretical Examinations. Applicants will be required to pass a written examination in English on the following subjects:

Section 1. Operative Dentistry, Orthodontia, and Radiography.

Section 2. Prosthetic Dentistry, Crown and Bridge Work.

Section 3. Dental Pathology, Dental Surgery and Bacteriology.

Section 4. General Anatomy and Physiology. Special Dental Anatomy, Histology and Physiology.

Section 5. Materia Medica, Therapeutics and Anesthesia, Chemistry and Metallurgy.

Conduct of Examinations. Applicants are required to bring pens, ink, and blotter.

1. Leave all text books, quiz compends and notes on the Examiner's desk during the examination.

2. Write legibly with ink, answer questions in order given and number the answer. Be sure the number on your book corresponds with that on your card, but do not write your name nor make any marks or identification on your book.

3. Write on both sides of leaf.

4. The question list must not be detached or copied.

5. Attend strictly to your own work. Any candidate detected in an attempt to give or obtain aid, in copying the questions, or using unfair means, shall be dismissed from the room and his papers shall be cancelled.

6. The results of your examination will be mailed to your address after a subsequent meeting of the Board. Do not expect your notice for at least a month.

7. No applicant may leave the room until he finishes his book, unless special permission is granted by an examiner.

Abstract from the Dental Law 1921

Section 13. Whoever falsely asserts that he has a certificate granted by said board, or who, having such certificate, fails to exhibit the same as required by this Act, or who falsely and with intent to deceive claims to be a graduate of any college granting degrees in dentistry, or who practises or attempts to practise dentistry or dental-hygiene as defined in section eleven hereof without being registered as herein provided, or any registered dentist or any owners or managers of an incorporated dental company who shall employ an unregis-

tered person as an operator, may be punished for each offence by a fine of not more than two hundred dollars or by imprisonment for three months, or by both such fine and imprisonment.

The Commonwealth of Massachusetts Board of Dental Examiners. Rules and Regulations Governing the Practice of Dental Hygienists

1. Each dental hygienist shall register with the Secretary of the Massachusetts Board of Dental Examiners when commencing practice, annually thereafter in the month of January and at such other times as he may change his place of employment or employer. Blanks for this purpose will be furnished by the Secretary of the Board.

2. The cleaning of teeth is limited to the removal of lime deposits, accretions, and stains from the exposed surfaces.

3. Any violation of these rules shall be amenable to provisions of Sections 11 and 13, of chapter 301 of the Acts of 1915, as amended by chapter 76 of the Acts of 1917, viz:

Section 11. Any person of good moral character and twenty years of age or over, who is a graduate of a training school for dental hygienists requiring a course of not less than one academic year and approved by said Board, or who is a graduate of a training school for nurses and has received three months' clinical training in dental hygiene at any such training school for dental hygienists, may, upon the payment of ten dollars, which shall not be returned to him, be examined by said Board in the subjects considered essential by it for a dental hygienist, and, if his examination is satisfactory, shall be registered as a dental hygienist and given a certificate allowing him to clean teeth under the direction of any registered dentist of this commonwealth, subject to such rules and regulations as may be adopted by said Board. An applicant who fails to pass a satisfactory examination shall be entitled to one re-examination at any future meeting of the Board, free of charge, but for each subsequent examination he shall pay ten dollars.

DENTAL ECONOMICS

An Address to Dental Students as the Dentists of the Future

By Hedley Ham, L.D.S., D.D.S., Melbourne, Australia

(*Continued from June*)

Ethics

I have been asked to say a few words about ethics for your guidance. I believe that a code of ethics for dentists was drawn up at the Federal Council Meeting of the National Dental Association of Australia held in Brisbane in 1912, and I should think that it might be obtainable and a copy of it should be available to students. I have not seen it, but I am reinforcing my own remarks on this subject from such excellent articles as *Professional Ethics* read before the Undergraduates' Society, Adelaide, published in the December number of the Australian Journal of Dentistry by Dr. A. Chapman, and a *Series of Lectures on Medical Ethics* by Dr. A. M. Anderson, published in the July 1921 issue of the Medical Journal of Australia. The gist of many of these precepts may be repeated here with advantage.

Ethics means moral obligation, the duty of conduct or the conduct of duty. Professional ethics is, then, professional conduct, and the preamble of the code of ethics drawn up at the Queensland meeting states that a dentist imbued with ethical ideas will always support and maintain the honor, usefulness and status of his profession and his professional relations with colleagues and patients, whose interest should be his highest consideration. He will carefully regard his civic duties and his relation to the state and the laws of his country, and he shall be a law-abiding citizen.

This is the obligation of a professional man in his profession. Mark the word "profession," which means a vocation, a calling to serve, distinct from an avocation; and because of that vocation or profession, which requires a special learned education, you are given special power and influence over the welfare of the people. Society places you in a position of trust and respect and expects more from you than from the ordinary citizen, so that if you, secure in the monopoly of your scientific

knowledge, take advantage of the confidence of your fellows, you do incalculable wrong to your profession.

The difference between a transgression of ethics and etiquette is that one is an offence against moral principles and the other a breach of manners and good taste.

A profession involves duty, service, and we have many noble examples of men in all professions who have stood at their posts of duty under all and any conditions.

These duties have been divided up into—

(1) Duty toward your professional brothers.

(2) Duty to each individual patient.

(3) Duty to the state.

In dealing with your brother dentists the motto, "Whatsoever ye would that men should do unto you do ye even so to them," is very applicable.

There is great necessity, particularly among dentists, for watchfulness in speech and action lest some careless remark or some little heeded act brings unintended trouble on the shoulders of a professional brother.

It is at all times well to refrain from intentional criticism of another's work, no matter what the circumstances be, because (1) you do not know under what circumstances the work was done; (2) the technic of a year or two ago is continually changing, and a junior with his newer knowledge may criticize work of an older man which was good technic when done and has done good service for many years; (3) there is sometimes a lack of candor on the part of the patient, who may just as surely defame you in turn if given a chance and respects you none the more for your criticism; (4) you lay yourself open to be placed in a witness box in a court case; (5) it is unseemly, ungentlemanly, and tends to bring your profession into bad repute and breaks down its entente cordiale.

The course of conduct in relation to all ethical phases of our profession is beyond the scope of this paper, but the following are based on those of the B.M.A.

Advertising

Is allowed within limits. It must be a simple announcement of commencement or resumption of practice. It must appear without spacing or display and should be of ordinary type.

No more than six insertions are allowed, except in country places, but then only within a reasonable period.

A practitioner may notify privately only his own patients.

No interview with a newspaper reporter on subjects relating to dentistry shall be given by any member engaged in active practice, unless the identity of the dentist is not revealed nor his name published

and a proof of the report for publication be submitted to the dentist for approval.

A brass plate should be only of such dimensions as will guide the public without having to hunt for it, should make as little display as possible and should be in good taste.

I should advise graduates to beware seeking experience in advertising or unethical practices. Some of them may be all right in Australia, but as a rule there are many professional pitfalls and temptations along that road which a young man, unless of strong character, would do well to avoid.

If a patient is sent by a medical man you should acknowledge it, preferably by letter, and give him what cooperation you can in the interest of his patient.

Collusion with any doctor or chemist by way of commission or gifts for sending patients should never be entertained. No honorable man, however, would lend himself to this.

Doctors sometimes refer a patient to a dentist other than their own. Every patient is free to consult anyone he wishes, but if there is no other reason than the preference of the medical man, the dentist to whom the case is sent should be careful not to injure the patient's own dentist. He should place himself in the position of consultant, and if he can get in touch with his fellow practitioner he should do so. Sometimes the patient suggests or requests a consultation, and that should be acceded to. In these days of focal infection the dentist is often called upon to determine whether or not a patient should have his teeth extracted for the sake of his general health. It is a grave responsibility, and I think more consultations between ourselves would be to the benefit of the patient.

In consultation observe these points:

When joint examination takes place, after which a further consultation is held in another room between the two men, the result thereof is made known to the patient by the consultant.

If there is a disagreement, either the treatment suggested by the consultant is given a fair trial or the dentist may state that he disagrees with the consultant but defers to his authority, or he may suggest a further consultation, or he may withdraw from the case.

The consultant should not attend the patient afterwards without the cognizance of the other dentist. He must not take any advantage of the dentist who called him.

This general principle should be strictly adhered to when acting for another dentist, particularly so when, through illness or while serving his country, a dentist has been absent for some time from his practice. If the dentist knows of the return of his fellow practitioner he should consider it his duty to recommend the return to their former dentist

of any patients coming to him. The same principle applies to a locum tenens. A locum tenens or assistant has no right to any special fees except those he receives from his principal.

When a dentist acts for another, some arrangement should be made as to the division of fees. The patient pays the fee to the original dentist, not to the locum, but, if offered to the latter, it may be accepted and adjusted with the dentist acted for.

Another professional breach is what is called "covering," that is, countenancing or assisting unqualified or unregistered persons.

Just a few words more before finishing this subject of our duty to our profession. Dr. Chapman quotes Lord Bacon as saying that "every man is a debtor to his profession from the which as men do ask to receive countenance and profit, so ought they, of duty, to endeavor to be a help and ornament thereto." I wonder if you, as students, ever gave a thought to the unselfish work of your teachers and lecturers, or to the zealous work of some members of dental societies. That is the true professional spirit—to give all you can so that others may benefit besides yourself. This is one of the first ethical codes laid down by Hippocrates.

But we all can benefit if we all pull together. Not all men like to be in the limelight of society meetings, but every one, beginning with the student, should, out of duty to his profession, be a member of a society. There is so much that remains yet to be done by the societies. We want more scope and power for research work, we want a benevolent society, an insurance and defence society, more facilities for the learning of new work, a better library, a better journal, better social relations and a dozen other things. If every present and future student, as a member of the Dental Students' Society, resolved to see that these things were initiated and carried out in the older Alumni Society by an adequate scheme of subscription from everyone, I believe that these things could be made real for the benefit of every dentist.

There are many more points under this heading of professional conduct between brother dentists, but the sum total of it is to act kindly toward and protect each other.

(To be continued)

A Constructive Plan for Financial Independence

By John H. Cooper, Yonkers, N. Y.

A definite financial program for life should be a part of every dentist's equipment. The earlier in life it is made the more certain it will be of fulfillment. It should be scientific, high enough to be

worth while, flexible enough to meet changes of basic factors yet not without some force, some incentive to "carry-on" regardless of ever-present difficulties.

As there are no two men exactly alike, neither are there any two sets of financial factors exactly alike, and it is impossible to prepare a stock program applicable to any large number of men. Nevertheless there are two basic factors common to most men, namely: the desire to provide everything possible for the comfort and happiness of the family and to secure for themselves a comfortable old age.

To dentists and doctors a third common factor must be attributed—that of the concentrated productive period, ending, as a rule, at the age of fifty-five or sixty.

With these fundamental facts in mind we shall proceed to make a survey and construct a program.

We are detailing herewith two cases of radically different nature as to the basic factors. Case No. 1 will be found to be characteristic in more instances than any other, in that it involves the man still building his practice and his capital and with the responsibilities of a family. Case No. 2 differs in that it deals with the man with established practice as of a later age. Both are actual in their factors and the solution thereof.

Case No. 1

Factors. Own age 31, wife's age 27, son's age 1. Intention to put boy through college, if possible.

Present capital, realizable value, $18,000 (including $13,500 life insurance).

Present net income $5,000. Essential living expenses $3,500.

Margin for savings and fluctuation of net income $1500.

Observations. If the same net income and living expenses continue for the next 24 years and no savings or time is lost by reason of unfortunate investments, the doctor should have accumulated a fund of approximately $30,000, which invested at 6% (the maximum for safety) would earn a retirement income of $1,800 a year. However, there are several contingencies: (1) disability through sickness or accident; (2) premature death; (3) unfortunate investments involving loss of capital. To meet these contingencies we have an average marginal income of $1,500 a year over and above the essential living expenses.

Requirements—A. (1) In the event of disability there would be a family of three, one an invalid. The income from the practice would cease but the living expenses would continue, diminished perhaps by necessity, increased probably by doctors' bills and other extra expenses. The minimum necessary income would be $3,000.

(2) In the event of death there would be a family of two. To give the child proper care would make it extremely difficult for its mother to earn much, if anything, by working. The amount of income necessary would not be so large as in the first case. We establish a requirement of $2,400 a year, allowing thus a margin for certain sickness and for the comforts of life to which they have been accustomed and perhaps sufficient to permit a professional training for the son. An income of this amount would be necessary only till the education of the son had been completed. Thereafter it is deemed advisable to provide an income of $1,200 a year for the wife, for at the age she would have reached her earning power would be very small.

Program—A. In the absence of sufficient capital to provide the necessary income in the first and second possibilities we resort to life insurance. We employ an ordinary life contract providing a disability income of $3,000 a year for life, an income to the wife beginning at death of insured of $2,400 a year and guaranteed for twenty years to her or her heirs, and beginning with the twenty-first year after the death of the insured an annual income for life to his wife of $1,200. This will require an allotment of $507.36 a year to insurance and leave a margin of $1,000 out of the $1,500 for savings and fluctuation of income. (This deposit is based on new insurance for the full requirements. With $13,500 of insurance already in force taken at earlier ages the total deposit would be even smaller.)

Requirements—B. With contingencies one and two provided for under *Program—A,* the question now arises as to the form of savings, the purpose being to accumulate a retirement income fund. Attendant upon all investments, of course, is the risk not only of a return of income but of the capital itself.

Dental economists are practically unanimous in advising the higher premium forms of life insurance to take up that portion of a dentist's income which may be applied to savings. The reasons are several. First, the possibility of loss of capital is eliminated. Secondly, the premium notice is the greatest possible aid to consistent deposits from a psychological standpoint. Thirdly, the time and thought of the dentist are left for devotion to his practice, and this factor should more than offset the possible difference in the rate of earnings on his capital.

Program—B. Referring to our "Observations" stated above, we find that it may be possible to accumulate a fund to provide an income of $1,800 at retirement age of fifty-five by saving $1,000 a year added to the present capital. Through insurance we are able to secure the same result, guaranteed by adding an additional $364.80 to the annual deposit, making a total of only $872.16.

Summary

Disability Income (Family of 3) $3,000 a year for life.

Death-Income to Wife (Family of 2) $2,400 a year for 20 years.

Death-Income to Wife (wife only) $1,200 a year for remainder of life.

Retirement at 55 (wife and self) $1,800 a year for remainder of life.

Case No. 2

Factors. Own age 45, wife's age 42, daughter's age 7. Intention to put daughter through college.

Present capital, realizable value, $250,000 (including $40,000 life insurance).

Present income: Practice $15,000; Investments $11,000.

Essential living expenses $12,000.

Observations. Here the elements of necessity of caring for the family in the event of death or disability and the necessity for accumulating a retirement income fund are minimized. The problem is one of keeping intact the fund already available and of devoting time and energy to professional practice.

If the present capital is kept intact the $40,000 life insurance in force would be largely consumed at death in the payment of inheritance taxes and other immediate expenses and is necessary to prevent shrinkage of the estate due to forced liquidation of investments at an inopportune time.

Requirements. Investment losses and loss of time and energy through attention to investments are to be offset by something to guarantee a minimum income in event of death or disability or for retirement. The minimum retirement income is fixed at $5,000, the minimum disability income at $6,000, and the minimum life income to the family at death of $3,600 a year while both live, $1,800 a year to be continued till the survivor's death.

Program. This guarantee is secured through insurance with the retirement income commencing at the age of sixty-five. (Where programs are arranged at the later years of practice the retirement income age should be advanced. The contracts are sometimes so written that premiums will cease at fifty-five or sixty and the income commence five years later.) This case provided two alternative methods of paying premiums: the usual annual deposit, amounting to $2,326.20 payable for twenty years, or one single deposit of $33,000 to have the contract paid up immediately. The latter method seemed the better in that it furnished the additional guarantee against the possibility of some unforeseen loss making it impossible to continue the annual deposits throughout the twenty years.

35 South Broadway.

PRACTICAL HINTS

This department is in charge of V. C. Smedley, D.D.S., and George R. Warner, M.D., D.D.S., 610 California Building, Denver, Colorado. To avoid unnecessary delay, Hints, Questions and Answers should be sent direct to them.

NOTE—Mention of proprietary articles by name in the text pages of the DENTAL DIGEST is contrary to the policy of the magazine. Contributions containing names of proprietary articles will be altered in accordance with this rule. This Department is conducted for readers of the DENTAL DIGEST, and the Editor has no time to answer communications "not for publication." Please enclose stamp if you desire a reply by letter.

Editor Practical Hints:

Your personal attention and reply would be greatly appreciated regarding following case.

I have mailed you separate parcel, cast of lower jaw, casts of old upper and lower rubber dentures, new upper aluminum and rubber lower dentures.

The patient, a man about sixty, presented wearing old rubber dentures, posterior teeth worn flat, anteriors broken, made many years ago. Lower ridge had become excessively absorbed in anterior region, and to overcome that and make plate comfortable he puts a layer of absorbent cotton in plate from about bicuspid to bicuspid, changing daily. The patient could eat, hold pipe, chew sideways with comfort; neither plate hurt, but to obviate use of cotton he wished new plates.

Sometime previous another dentist had made new lower rubber to old upper; he could not use it as it hurt the gums.

I made him a new aluminum upper, rubber lower, (gold filling and crown, patient's idea); upper was fine, no trouble then or since; likes aluminum much better than rubber but cannot get lower rubber satisfactory.

First set, I made upper as shown, rubber lower; was careful to get bite correct and opening of bite same as old dentures; try-in plates seemed comfortable, but when finished lower could not be used; hurt here, hurt there, bite open to wide, bit cheeks, plate hurt on retromolar area as though a backward thrust of plate.

Made new rubber lower as shown; closing bite slightly; spent one-half hour trying in; patient said all correct; when finished said bite closed slightly too much, but could stand that if comfortable in masticating, which I cannot accomplish.

I repeatedly trimmed teeth or periphery; have a balanced bite, and patient says it is O. K. everywhere, but when he tries to eat says it moves and hurts gums. It is comfortable when talking, smoking, can hold pipe (a great smoker), but cannot eat.

Lower was originally much wider base but had to trim (against my judgment) to satisfy patient. His idea of plate is that it should be softer to gums, since he is used to the cotton lining.

Could an unvulcanizable rubber, as obturator rubber be used on base of usual plate, with benefit?

Would an aluminum lower be of benefit? Do you think cotton has spoiled him for anything else? Do you think I should enlarge greatly the base area of lower?

Do you think grinding teeth flatter would avoid some of lower movement, as he is a great one to chew sideways? Is tissue marked by pencil the interior oblique line, and should it be covered by denture? I had to trim away from it as it is slightly movable and plate moved and pinched it. Is there a system of impression-taking with soft waxes of different melting points for tender tissues of any benefit?

I follow Dr. I. Lester Furnas' method of impression-taking as taught at Vancouver, 1921; that is, first an impression in a tough composition, remove same from tray, trim sides for muscle freedom, take final impression in soft plaster, and get good results but do not claim to be a denture specialist. Enclosed cast is just from snap impression compound alone.

I think patient really tries to use dentures, but on discomfort goes back to old set; he is reasonable and does not become discouraged.

L. T. A.

Answer.—I would suggest that you secure from the New York office of the Dentists' Supply Company a copy of "Professional Denture Service." It is my opinion that the best solution of the difficulties presented in this type of a lower mouth is found in the modeling compound impression technic given by Doctor Tench in the above publication. You will also find the entire technic described herein to be satisfactory and helpful in your work.

I think that in such a case obturator rubber might be used to advantage as you suggest. You should understand, however, that the use of this unvulcanizable rubber requires a very exact technic in wax carving and tinning of surfaces of mold in flasking as it is very difficult to trim and polish after vulcanization. About the only way to trim it without tearing and leaving a rough surface is to burn it with a hot knife or spatula.

Aluminum has some advantages over hard rubber for a sensitive mouth if your technic provides an equally accurate fit. In either case

I think a high, smooth polish should be secured on the surface in contact with the gum as well as the buccal and lingual surfaces, and all edges should be finished off thick, smooth and rounded.

In answer to the next question I would say "Yes." You should be able to cover very much more surface than is covered by this plate you sent me.

No, I think your teeth are ground flat enough. As far as I can tell from your cast, the line you have marked is the internal oblique line and I think your dentures should extend beyond this from one-sixteenth to one-eighth of an inch.—V. C. SMEDLEY.

Editor Practical Hints:

In regard to above I used obturator rubber enlarging base of rubber greatly, covering double the tissue; this gave perfect results and dentures now are entirely satisfactory to patient. I thank you for your kind assistance. L. T. A.

Editor Practical Hints:

I have a patient for whom I put on a posterior bridge (right upper from cuspid to first molar). Have half crown cast of Tinker gold on molar; occlusion good; some pyorrhea around roots which I have treated, so there is no pus or inflammation. Crown smooth and margins very good.

She complains of an acid or burning sensation from the saliva in this area only, except when saliva flows down the throat—it burns all the way down. Gums and palate look healthy. What can you recommend? L. C. A.

ANSWER.—Would recommend that this patient be referred to a competent physician or medical diagnostician as I do not believe that the bridge or any other dental work or condition can be a causing factor of this particular symptom. I have asked Doctor Warner's opinion about this and he also does not think it can be a dental disturbance but suggests that such a sensation might be caused by a diseased tonsil.—V. C. SMEDLEY.

Editor Practical Hints:

Kindly glance over the enclosed circular and tell me your own opinion of this pulp chamber paste. Does the pulp tissue remaining in the canals die, or does it become sterile so as not to give after-trouble? I notice there is another preparation which is used the same as this preparation but having different ingredients. Both processes are called "pulp fixation." I would like your opinion. I was taught

pulp should be removed and canals thoroughly filled, but we all know how impossible this is in a great majority of cases.

I have used this preparation in about eight or ten cases and have had no trouble whatsoever. The first I used was about two years ago and patient claims tooth has never given a particle of trouble. Is a dentist justified in using these preparations according to law?

G. A. H.

ANSWER.—I cannot give you any accurate or scientific information regarding any of the preparations, procedure or results of the operation known as "pulp fixation." My advice would be if you have been following this practice, that you get a number or all of these patients in for an x-ray examination of the particular teeth treated, and if possible treat a tooth or a number of teeth this way that are condemned to the forceps anyway within a year or two, and after their extraction have cultures made of the apical areas.

In practically all cases of pulp exposure, or near pulp exposure, where there is no actual breaking down or destruction of the pulp tissue, we have found in our practice that the most satisfactory procedure is the soothing and capping of these pulps with a bland, protecting, sedative cement. We find that these teeth with pulps treated and protected in this way remain vital and normal indefinitely; and surely in this day and age all must acknowledge that teeth with normal, vital pulps are preferable to those treated by any method of devitalization or fixation.

I do not think that the law in any state stipulates what preparations a dentist should or should not use. We are simply required by law to use reasonable diligence, intelligence, and skill in the conducting of our practices. Any time that a patient feels that our practice has resulted in an injury to him, he may have recourse to the law, when it becomes the court's duty to determine whether or not we have used reasonable diligence, intelligence and skill in the particular case in question.—V. C. SMEDLEY.

DENTAL LABORATORIES

Laboratory Team Work*

By Eugene Mueller, Omaha, Nebraska

Laboratory teamwork, briefly stated, simply means in my opinion every person giving of his best efforts for the common good. It would indeed be an ideal business if such a thing were possible, because it has been my experience, and no doubt the experience of others, that no matter how well and how often we have delivered finished work and received words of praise, one piece of carelessness or lack of teamwork may lose us the customer and require extraordinary efforts for us to regain his good will.

The lowly errand boy can spoil the efforts of all of the best workmen; an undiplomatic bookkeeper can do incalculable harm, and so on through the entire organization. So if we can in some manner get the interest of all our employees, it will result in a degree of efficient cooperation that cannot help but make for better business and better feeling throughout the organization.

Occasionally in our laboratory we have a get-together meeting and encourage the employees to discuss and suggest improvements. We are convinced that these meetings result in a great deal of good. I recall a recent meeting at which time, it seems, through an oversight one of our most valuable men was not informed and, as a result of some conversation which occurred following the meeting, he prepared a report on conditions in the laboratory, with comments. There is just one part of the letter to which I wish to refer because it has a thought back of it which I should like to emphasize. That thought is a personal interest in the work resulting in real teamwork:

"We were speaking about starting time and quitting time and about the time clock. I really think the time clock does not amount to much on either side, if the employees can once be made to realize that they are working for a living. On the other hand, if they are not busy, it is all right to take an hour or two for lunch, but if they are busy they

*Extracts from a paper read before the American Dental Laboratories Association, Cleveland, September 12, 1923.

should realize that the work must go out. Many of them don't know what the work means to the dentist and what is involved if he does not get his work done on time and right."

One might go on indefinitely speaking of various aspects of teamwork, but those of you who follow the sporting pages of the newspapers know that it was not until America's greatest drawing card in baseball —Babe Ruth—learned the lesson of teamwork that he became of much value to his team.

Individual stars in the laboratory do as much harm as individual stars in baseball and they cause more dissension with an employee and give less satisfaction to the owners than do average workmen. Coordination of efforts entirely throughout the laboratory must prevail to obtain satisfactory results. If I were asked to lay down specific rules which laboratories must follow to obtain success, I would unhesitatingly say that with real teamwork anything is possible and without it the efforts are absolutely wasted. To get these results, we must have ideals, and those ideals must become a part of all of the employees of the laboratory. Employees naturally must be treated in a live-and-let-live manner. Working conditions should be as nearly perfect as we can make them. A word of praise to the polisher of plates as well as to the originator of the wonderful restorations is always in order. Once we arouse a pride in craftsmanship, and any finer instinct which is in the breast of every human being, we shall be well on our way to the solution of our most troublesome problem.

What position, may I ask, does the dental laboratory occupy in relation to the dentist? Is the laboratory to be a factory-run affair or something on a higher plane, something that serves humanity by helping the dentist to render more efficient service to his patients? If we are to operate our business on a strictly dollar-and-cents basis, then the code of ethics we are considering is entirely out of place. If, on the other hand, we are earnestly striving to build up a business operated on idealistic plans, not forgetting in the meantime that we deserve to share in whatever rewards accrue from the method, then we should boldly adopt a policy of first setting our own house in order and then ask that we be treated as partners or coworkers toward a common end.

Many of us will recall that not so many years ago many a dentist was ashamed to receive a package bearing a laboratory sticker on the wrapper. He wanted his patients to believe that all mechanical work was done by him personally, and he even went to the extent of asking that no stickers be used in addressing his packages for delivery. We have all had that experience which fortunately has gone the way of the famous "Dodo." Yet, there are those today who still yearn for the "good old laboratory days." I believe that a friendly discussion on

this subject is well worth while, because the dental laboratory or technician, regardless of his faults, has come to stay.

In my own experience I have found that the broad-gauge dentists are always willing to cooperate, and as they always have a certain following, ways and means must be devised to associate ourselves with the better minds of the profession, because it is a truth that each depends upon the other. Calling names or making unsubstantiated statements will in the end reflect upon the maker. I recall listening to a prominent educator at the National Dental Faculties' Association make a statement in discussing the relationship of supply houses to dental colleges. He said that "dentists could do without supply houses, but that supply houses could not do without dentists." That statement could be refuted in a thousand ways. The purpose in mentioning it is merely to show a state of mind sometimes exists that could be easily corrected if the facts were carefully set forth.

Now while I may have been talking in generalities, because it is not always possible to bring out and explain concrete cases to illustrate points, I seriously and most strenuously object to anyone holding my profession lightly or speaking of it in a slighting way, just as (and rightly, too) dentists object to being termed "tooth-carpenters."

So, in summing up the relations of dentists to the laboratory, I believe we can do nothing better than follow the Golden Rule. Give the profession all the cooperation you can, and as often as you are in position to do so. The dentist works under tremendous pressure. Do what you think will help him to satisfy his patients better. Tell the world that you run a laboratory and operate it under the Code of Ethics, which I hope will be adopted by our organization at this meeting, and, with the confidence born of truth and right dealing, we need have no fears for the future of our organization and business.

The Other Side of the Dental Laboratory Question

By Sigel Roush, M.D., D.D.S., Troy, N. Y.

The article in the January and February (1924) issues of THE DIGEST on the "Relations of the Laboratory to the Dental Profession" by Samuel G. Supplee was timely, to the point and helpful. I appreciate the author's position and heartily indorse his suggestions. But at the same time there is another side to the question—the operator's side.

All laboratories do not reach the standard of excellence suggested in the article. Many of them are far from creditable, and what would be true of some would be wide of the mark when measured by a vast

percentage of the others. This is especially true of the laboratories established and run by men of limited training and experience. It is not unusual to find the proprietor a man who has worked for some private practitioner for a few years and then, moved by a perfectly legitimate ambition, has started for himself. The dentist for whom he had formerly worked may or may not have been a competent instructor. Even at best his private laboratory work has been confined largely to vulcanite plates and the simpler forms of bridgework. With this preparation the mechanical man starts in business for himself. If nature has endowed him with a liberal amount of mechanical ability and reasonable ingenuity he "gets by" and improves, but if he is naturally clumsy the dentist who patronizes his laboratory suffers.

I fancy I am not alone when I say that to have one's carefully taken and accurate impressions ruined in the making of the casts is not an unusual experience in some of these laboratories. The operator may take great pride in his impressions and bites, but to have the case returned to try in with the model hacked and broken and articulated at all angles or at any angle, as may happen—median line far to the right or left and jaws of the articulator almost describing the diameter of a circle—this presents a phase of the *other* side of the question! Or if it is a piece of bridgework with open-faced crowns, where a fit is absolutely essential, and the crowns come back half filled with solder with the almost certain impossibility even to get the bridge on the abutments, I say these are instances that try to the limit the patience and temper of the careful chair-man.

And so I agree that some sort of a working basis and understanding between the laboratory and the operator is both desirable and necessary for satisfactory teamwork. This may be accomplished through standardizing the work by suitable laws, examinations and certificates, or some other way that would require laboratory workers to meet certain requirements; and at the same time the dentist should on his part be expected to furnish proper material for the mechanical worker. To accomplish this desirable condition, the laboratory man must have considerable experience in fitting in plates and in taking impressions, and, if not actually doing the work, at least should have a chance to observe the work done by others. I do not believe a man can be a really competent laboratory worker until he is familiar from observation or actual work with the operations in the mouth. Take for example the anatomy of the mouth, the various muscles, frena, tissues and fats in and about the oral cavity and their relation and effect on the dentures to be worn. How can a man work intelligently on the construction of plates if he hasn't had opportunity to see how one affects the other when *in situ?*

So the dentist and laboratory man must be more *en rapport* and

more familiar and sympathetic with each other's trials and problems before an ideal relation between them can be brought about.

44 Third Street.

An Experience With a Dentist

Dr. X, a regular customer, sent a preparation for a jacket crown which was so poorly made as to insure that the crown made on it would not be satisfactory. The preparation was returned to him with an explanation and a request for a better preparation. The second preparation, which was no better than the first, was accompanied by the following letter:

"As per your request, on the porcelain jacket I sent last week, enclosed is a wax impression, wax bite, opposing impression, thimble impression. In addition you have in your laboratory a thimble impression and a combination impression, wax bite and opposing impression.

"If you want to, set this case up on one of the latest scientific articulators, so as to get it anatomically correct. I will take measurements and then after trying will take a check bite. Perhaps, to make it more accurate, we will recheck after the check.

"If there are any more impressions or bites you want, why just write me and I'll have the patient come back. She doesn't mind it a bit; she only lives about 10 miles from here and she likes to visit her dear little dentist. If I can be of further assistance to you by getting a photo of the patient, I will be only too pleased to send you one. Also a description of her and her habits, etc. This may all assist your artist-technician in building up a nice porcelain jacket.

"Of course, don't hurry and make this case quickly and spoil it. Take your time—any time will do. The patient doesn't mind going around with a ground tooth in the front of her mouth. She rather likes it.

"And don't worry about the shade. You can get it wrong. The patient thinks it rather cute to have a brown tooth up against a pearly gray one. She even thinks that that blue tinge you so often see in false teeth is wonderful.

Yours for good lab. work,

..... D.D.S."

A subsequent telephone conversation with the dentist showed that he was considerably peeved when he began the letter, but that when he got that out of his system during the first part of the letter he concluded he might just as well get a laugh out of the latter portion.

But laugh or no laugh, a good preparation is required if a satisfactory jacket crown is to be made.

DENTAL SECRETARIES and ASSISTANTS

Secretaries' Questionnaire

All questions and communications should be addressed to Miss Elsie Pierce, care of THE DENTAL DIGEST, 220 West 42nd Street, New York City.

Will you please send me the best method for removing teeth from vulcanite rubber?

Coat the vulcanite denture from which teeth are to be removed, at the point where the teeth are imbedded in the rubber, with vaseline or wax. Hold over Bunsen burner and heat slowly; then push the teeth out of the softened rubber with pointed instrument. If particles of rubber adhere between the pins, pick out with pointed instrument, working carefully so as not to fracture the porcelain.

I am often asked by patients what tooth-pastes and tooth-powders are made of, also what the doctor means when he speaks of an "astringent mouth wash." E. C., Yonkers.

Precipitated chalk is the foundation of most tooth-pastes and powders; some contain powdered soap which has the property of removing film from the teeth; saccharin is used to sweeten and disguise the taste of the chalk and soap. Some contain menthol as an antiseptic and for a cooling effect. The flavor is optional to each particular make, and serves to make them taste more pleasant.

Astringent remedies are those which cause contraction of muscular tissue and lessen secretions from mucuous surfaces. In weak solutions they act as tonics, but in concentrated forms they are irritants and caustics. Tannic acid is a vegetable astringent; alum is a mineral astringent.

Will you please tell me the difference between neuritis and neuralgia? R. S.

The inflammation of a nerve is meant by the term "neuritis"; severe paroxysmal pain along the course of a nerve, not associated with

demonstrable structural changes in the nerve, is meant by the term "neuralgia." Pressure increases the pain of neuritis, while it often relieves the pain of neuralgia.

We are in receipt of a letter from "Dental Assistant, California," as follows: Your letter came to me some time ago, also one from "G., Middle West," to whom you were so kind as to send the letter from me. I am very sorry to say that there is no society for dental assistants in Los Angeles or Pasadena. One was organized some time ago but "fell through." I was not here at that time but feel sure that another will come into existence and with girls ready to go ahead and push will be a success. I am always ready to do anything to help the dental assistants.

I should appreciate it if you would give me the address of the Educational and Efficiency Society for Dental Assistants, also how to go about it to become a member of this Society.

D. C., Brooklyn.

We have had a number of requests for this information and suggest that those interested get in touch with the President, Juliette A. Southard, 174 West 96th St., New York City, or with Martha Hall, Chairman of the Membership Committee, 221 Autumn Ave., Brooklyn, N. Y.

I should like to become an Oral Hygienist. How long is the course, and where could I take it?

E. M. C., Brooklyn.

Would you kindly inform me if you know of a school that gives a course in Oral Hygiene where a high school training is not required?

I. B., Australia.

All correspondents interested in a course in Oral Hygiene should get in touch with Dr. Anna V. Hughes, Director of the School of Dental Hygiene, Columbia University, 302 East 35th St., New York City, or address the Secretary of Forsyth Dental Infirmary, Boston, Mass., or Rochester Dental Dispensary, Rochester, N. Y.

April Meeting

OF

EDUCATIONAL AND EFFICIENCY SOCIETY FOR DENTAL ASSISTANTS, FIRST DISTRICT, NEW YORK, INC.

The April meeting of the Educational and Efficiency Society for Dental Assistants was held on Tuesday evening, April 8th, at the Academy of Medicine, 17 West 43rd St., New York.

After the usual order of business the following committees reported: Reception Committee, Visiting Committee, Membership Committee, Out-Door Activities Committee. The Dinner Committee through its Chairman, Miss Autenrieth, announced that plans had been perfected for the third annual dinner to be held on April 26th. The program will be of special interest, speakers of national prominence will give addresses, and musical talent will contribute to the enjoyment of the evening. Many prominent members of the dental profession have accepted invitations to be present.

The chairmen of the various classes reported that the work of these special courses of instruction, offered to the members free of charge, had been most satisfactory, they had been well attended, and the instructors were well pleased with the work accomplished. A new enrollment will be taken for the opening in the Fall and it is hoped that every member of the Society will enlist in at least two of the subjects offered. The care of the general equipment in the office will be added to the courses already mapped out, which embrace General Assisting, Sterilization, X-rays, Laboratory Procedure, Accounting, Porcelain, Speaking and Parliamentary Procedure.

The report on the activities of the Educational and Efficiency Clinic Club follows. At a meeting of the Clinic Club held on March 24th arrangements were completed for the clinics to be given before the New Jersey State Dental Society Convention at Trenton, on Thursday and Friday, April 10th and 11th, from 10 A. M. to 5 P. M.; before the annual meeting of the Dental Society of the State of New York on Friday, May 9th and 10th, at 9 A. M., at Binghamton; and also before the annual meeting of The Connecticut Dental Hygienists' Association, Saturday, May 17th, at Hartford. At these clinics the clinicians will demonstrate the numerous and varied things that the capable dental assistant can do to relieve the dentist and render more efficient service both to his patient and to himself.

Dr. F. R. Adams, President of the Second District Dental Society of New York, and Miss H. McKeever, R.N., were the speakers of the evening. In a very interesting address entitled "A Few Don'ts," Dr. Adams stated that the day of the dental office without an efficient dental assistant was past, that today the progressive dentist who is earnestly trying to be of service to humanity has in his employ one or more women assistants who relieve him of all the routine responsibilities in the conduct of his practice, leaving him free to devote all his time to the care of his patients. He praised the calling of dental assistant, said it was a fine occupation and one worthy of every recognition and best effort on the part of the young woman of ability and judgment. Dr. Adams emphasized the fact that the three most important qualities needed in this calling were enthusiasm, tact, and personality. "If

you do not have enthusiasm, then there is no place for you in the dental office. You must like your work and be ready to meet any trying situation with a smile. To be enthusiastic will mean that you will be loyal, for without loyalty true service does not exist. You must possess tact, and do not forget that the most important thing in the dental office is the patient. Cultivate the ability to make each patient feel that he is the most important person coming to your office. Tact on the part of the assistant has increased the success of many offices, whereas the lack of tact has helped to spoil many a promising practice. Personality means much in a professional office. Your greeting of the patient must be pleasant. Keep smiling, be sympathetic and cheerful. And now for a few *don'ts*. Don't talk too much. Don't talk over the patient's head; that is, do not carry on an animated conversation with the doctor to the exclusion of the patient. Don't ask questions relative to other patients or work in front of the patient in the chair. Don't always have an answer ready; I mean, don't talk back. Don't ask personal questions of the patients, relative either to their affairs or their clothes. Don't chew gum. Don't manicure your nails or fix your hair in the operating room. Don't lean on the back of the chair while the doctor is operating. Don't wear jewels with a uniform while on duty. Don't make social appointments over the telephone or carry on long personal conversations. Don't place religious or fraternal magazines on the table in the waiting room." In closing, Dr. Adams congratulated the Society on the constructive work it was doing and mentioned especially the classes and the great benefit they would bring to the members who took advantage of the opportunity offered of increasing their knowledge.

Miss H. McKeever spoke on "Children We Meet and How to Treat Them." A child learns everything by imitation and suggestion; therefore it is very important to be on our good behavior and think carefully before we speak. We have a very observing audience in children, and if we expect a child to have self-control we must set an example. The mentality of young children is incapable of grasping the mental processes of the adult mind. With a grown-up one can reason in terms which he may understand but the child mind must be reached through actions rather than words. A kind deed at the right moment will create a thought association which remains above all else. For instance, knowing that all medical treatment is disagreeable to a child and more or less terrifying, we perform some particularly agreeable act, such as giving it a lollypop or toy, or admire some quality in dress or appearance, creating a distinctly pleasant thought association with the particular treatment performed so that, when it becomes necessary to administer similar treatment again, the recurrence of similar agreeable attentions removes from the child's mind thoughts of fear and we are professionally just that much better off. I should

like to suggest to dentists and their assistants that "a lollypop in time saves the doctor's time."

At the request of the Society Miss Mae L. Bennett gave a resumé of the paper which she had given before the Dental Hygienists' Association in February on "Cooperation Between the Dental Assistant and the Dental Hygienist."

The Society was honored in having its President, who is also the chairman of the committee in charge of the organization of the American Dental Assistants' Association, one of the guests of honor and speakers at the first annual dinner of the Chicago and Cook County Dental Assistants' Association in Chicago on Thursday evening, April 3rd, at the La Salle Hotel. Many prominent members of the dental profession were present. A resolution was presented by Juliette A. Southard, as Chairman of the National Committee, asking for the endorsement of those present to the plan of organization of an American Dental Assistants' Association to conform as closely as possible to the plan and ideals of the American Dental Association. This resolution was put to vote by Miss J. C. Ellsworth, President of the Chicago and Cook County Dental Assistants' Association and unanimously carried. The committee will meet in Dallas next November at the time of the annual meeting of the American Dental Association and it is hoped to have the active cooperation of every dental assistants' society throughout the country as charter members of this National Association.

Nominations were made for the offices of President, Vice-president, Secretary, Treasurer, Chairman and two members of Executive Committee. These officers will be elected at the May meeting and installed at the close of the meeting, which will be the last one of the season. The Society will meet in the fall on the second Tuesday in October.

Five new members were received into the Society and several applications for membership were received.

The Society meets on the second Tuesday of the month from October to May, inclusive. Young women dental assistants employed in ethical dental offices are eligible to membership. The object of the Society is greater education for greater efficiency in service.

April Meeting

OF

EDUCATIONAL AND EFFICIENCY SOCIETY FOR DENTAL ASSISTANTS OF MASSACHUSETTS

The third meeting of the Educational and Efficiency Society for Dental Assistants of Massachusetts was held in Salem on April 29th, at 219 Essex Street. Mrs. F. E. Jeffrey, president of the Society,

introduced the speakers, the first of whom was Mrs. G. R. Savage of Lynn, a registered nurse, whose work with Dr. Savage has shown her the necessity of a dental assistant having a knowledge of many things which the nurse learns during her training course. These things she explained in her talk. She also spoke briefly on the subject of general anesthesia.

Dr. E. F. Rice, a specialist in x-ray work, read a very interesting paper which explained in detail the general principles of x-ray films for diagnostic purposes. He explained also the care that must be used and the technic that must be developed in the taking of x-ray negatives. After the meeting the members adjourned to Dr. Rice's laboratory where he gave a practical demonstration, taking and developing films and showing how, by immediate development, it was possible to see in five minutes what trouble, if any, was present. This demonstration was followed by a display of a large number of films, both dental and medical, showing pathological conditions.

The next meeting will be held in Boston and the members will then have an opportunity to visit one of the large dental laboratories and receive instruction in plate work and gold casting.

Our Dental Assistant*

By Sylvia Danenbaum, New York, N. Y.

The photoplay is sometimes called the silent drama and bears very little relationship to dentistry, although we do sometimes have "dramatic silences" in the dental office! But what I want to call to mind are the novel ways in which some exhibitors introduce the film on the screen. One way is to show a scene in which is a room with a shelf extended across it. On this shelf is a variety of bottles, of varied sizes and shapes, each with a different label. One might be Adventure, another Romance, others Truth, Education, Travel, etc. Below the shelf stands an old-fashioned wooden washtub on a three-legged stool. This tub, however, has a crank or handle extending from its side. There is a queer-looking old man, who pours a little of the contents of each bottle into the tub and then turns the crank vigorously. As he does this, the words, "———'s Views of Current Events," come up from the tub, form themselves on the silver sheet, and the play is on. So it is with dental assisting, a profession made up of so many little details; and of especial importance is the personality of the dental assistant.

* Delivered before the Educational and Efficiency Society for Dental Assistants, First District, New York, Inc., December 11, 1923.

Let us imagine a shelf, a tub, and a number of bottles, each bottle containing an ingredient in the make-up of the dental assistant. Our labels would read: Ambition, Determination, Perseverance, Appearance, Promptness, Energy, Will-power, Initiative, Ability, Confidence, Concentration, Cooperation, Loyalty.

Let us take the first bottle—Ambition. What is ambition? Ambition is the desire to get ahead. We must have ambition or we shall stay in the same old rut. Only those of us who *wish* to get *ahead* can get there. And next—Determination. Determination is a state of decision. We must determine each day that we will accomplish a certain task that day and then see that we do it. If we would start easily, let us set a not-too-ambitious goal and then strive determinedly toward it. When we reach that goal, we may enlarge our next attempt and thus go on, farther and farther.

Another bottle, and a most important ingredient—Perseverance. By consulting Webster we find that perseverance means "persistence in anything undertaken; continued pursuit of any enterprise begun." We can dream wonderful dreams and plan real plans on them, but if we do not persevere, what is their value? Our ambition will make us visualize our ideals, and our determination and perseverance will carry us through. But we cannot afford to be like the little boy who had just had several deciduous teeth extracted. He looked so mournful after it was all over that the doctor tried to encourage him by saying, "Don't worry, sonny, those teeth will grow in again." And the boy replied, "Yes, sir, but will they grow in in time for dinner?" We cannot expect everything to come true at once. We must just "plug away," using a little "stick-to-itiveness," and we will get there just as those teeth will grow in.

Now we have Appearance. Appearance does not stand simply for a clean, white uniform and neat coiffure. Of course, the attire counts a great deal. I remember once attending a lecture by a prominent speaker of whom I had heard often but whom I had never seen. I had pictured in my mind a tall, well-built, dignified man, who would probably be attired very formally, wearing one of those high collars with the flaps in front and a very conservative necktie. When the speaker entered the room, he was entirely unlike my mental picture for, although he was tall and fairly well built, his appearance was most slovenly. His hair looked as if it had not been combed for weeks; his blue serge suit was badly in need of pressing; he wore a soft collar that turned up at the ends for lack of starch. But his tie! I have three brothers each of whom has a perfect mania for collecting the most hideous ties that he can lay his hands on, and this one would have warmed their hearts—it would have been the pride of their collection! Besides being of a loud pattern, it was tied in such a manner

that it looked as if it would come apart any minute. His voice was wonderful, his manner sincere, and he had two dimples in his cheeks that played "hide and seek" all evening. But in spite of his brilliancy there ran through my appreciation of his talk a certain uncomfortable feeling that I can lay only to his appearance. And the friends who were with me agreed with me on that point. Yes, it does count! But appearance really means more than that. It means a pleasant, cheerful smile, a gentle and tactful manner, a soothing, quiet, distinct tone of voice, and a plentiful use of common sense. We all know that the impression we give to the patient depends largely upon our appearance. By being just ourselves, unaffected, using clear, decisive language, we will create a far better impression than if we try to "put on airs," or imitate someone whom we like very much but whose manner does not fit us at all. People with whom we come in daily contact judge us by the appearance we make and, judging us, pass censure on the office.

We must be prompt—prompt to keep our word and our appointments. Be in the office in time and right to the minute in the preparation of our duties. If we are up to the mark in our part of the conduct of the dental office, we will be so much nearer to a smoothly running establishment and a great many avoidable delays and annoyances will be bid "good riddance."

Energy is the next ingredient. Energy is strength of expression, life, activity, spirit. It comes from good health, and we certainly need plenty of energy to perform the innumerable details of a dental assistant's life. I know a wonderful example of these two qualities of energy and promptness. We have a patient, Mr. B, who is seventy-six years of age, but one would mistake him for a man in the late fifties. He sees well without the aid of glasses, his hearing is normal, he has all of his own teeth except the four upper anteriors. He has those now, too, but they are not his own. However, he is a lawyer and goes about active practice every day except Sunday, and on that day you will find him tramping about Van Cortlandt Park or Westchester. And as for promptness—his appointment is generally at nine o'clock, on the way to his office, and on the mornings that he comes, I can almost set the clock by him. He rings the bell on the minute of nine and has never missed yet. But then, when you stop to consider, he is seventy-six years old and has had all those long years to practice keeping appointments, so he ought to be perfect by now.

Next! Will power is the power to perform a task at the time that it must be done. Each day brings us the same round of irritating concerns and duties. Let us perform them cheerfully, let us perform them happily, and they then will not seem so burdensome. But we must not hurry. No one in a hurry can possibly have her wits about her. We may occasionally be in haste but we need never hurry. Just

by preserving our presence of mind—and our temper—we can overcome a great many obstacles and avoid a great many embarrassing situations. While in high school, I studied under a teacher of English who had written on her blackboard where every one could see it, "You can, if you will to," and it is a good thing to remember in a difficulty, or at any other time.

"Initiative is imperative." It is self-reliant enterprise, action that tends to open and develop new fields. "We must plan a course of action and then go ahead with it. We cannot sit back and expect someone else to lead us all the time. Success comes to those who take the initiative. Keep pushing, be thorough, and master every detail." I remember on one occasion hearing Mr. Heywood Broun speak on his favorite topics, "It Seems to Me." Mr. Broun is the dramatic critic for the New York World, and he said that when he writes a criticism of a play, he does not state, "This play is good," or "This play is bad." He writes, "It seems to me that this play is good," or "In my mind, this play is deplorable"—always his own opinion, his own impression. Mr. Broun told an amusing incident in connection with the recent newspaper strike. You probably remember the time when they issued those samples of newspapers in which they printed only the very important news, such as murders and divorce scandals, and left out such trivial items as art, education, music and drama. Just about this time a letter came to Mr. Broun from one of his admirers, reading in part, "Last week I went to see a play. Now my friends are asking me how I liked it. I can't tell them. I don't know. I have not seen a newspaper criticism yet."

The next bottle—Ability! Ability is the power to perform, skill or competence in doing. It comes through knowledge, and knowledge comes through study and observation. What do we mean by knowledge? Not only knowledge of technical matters relating to dentistry, not just knowing how to keep accurate accounts or sterilize instruments properly, but a little understanding of human nature, and keeping up-to-date with the news of the day. Our Society offers wonderful opportunities in its courses pertaining to dental assisting, and we all have the privilege of accepting them. I have, and have learned many little points that I have put to good use in the office. But I got something more than just a profitable evening from each class. I came away with a feeling that I had had a most enjoyable time with girls who have with me a common cause, a certain warm feeling that everything is fine and life is great, anyway. Still, we really should be informed as to how the baseball game is coming on, for the sake of the school-boy patient; how the football season is progressing for the college boy and girl; about golf and theatre for the tired business man; about the servant problem and the high cost of living for the house-

wife; and about as many different interests as there are different types of patients.

And Observation! To observe is to notice attentively, to fix the mind upon, not merely to look at. What a power it is in the dental office—the observances of the little likes and dislikes of our patients, watching out for new methods and applying them in our daily work, and noticing where the doctor "plays favorites" with his instruments!

If we have Ability and Knowledge, it naturally follows that we have Self-confidence. Self-confidence is contagious and noticeable. Our actions show whether we are positive or in doubt, and our associates can place their trust in us just so far as they realize that we trust ourselves. Then we can be relied upon by our employers and accept responsibilities. State of mind makes for accomplishment or failure. We should always be assured of our ability to do things.

Now we add Concentration and Cooperation. If we would get the best results possible, we must concentrate. We cannot think of the patient after the next and expect to assist the doctor properly in caring for the one in the chair at the present time. We shall find that when we give our full attention to the work at hand, we shall get through much more quickly and perform the duty much more thoroughly than if, for instance, we plan the next day's work while writing up today's accounts. The instruments are looking much cleaner and brighter now that I sterilize them when I am sterilizing them and do not think of the play I saw last night.

And Cooperation! The dictionary states that cooperation is a concurrent effort, a collective action in pursuit of common well-being; so when we cooperate with our fellow-workers, we all benefit by it. We must cooperate or we will constantly be at odds, and nothing will be in harmony. There must be cooperation with the patient, too. Sympathy is another word for it, sympathy for the weak and strong alike, tolerance of the ignorance or misunderstanding of the less intelligent patient, and a real desire to help him.

And lastly—Sincerity! When we are sincere, we are free from simulation, free from hypocrisy and false pretense. We must be sincere and loyal, we must perform each duty conscientiously, in all earnestness, straight from the heart, if we would prove of most value and be successful. And now the question: What constitutes Success? An absorbing interest in the work one loves, a constant giving of one's self—that is happiness! And to me happiness is success.

Now the ingredients are in the churn in the proper proportions. It is for us to mix them well and store the finished product in a fresh bottle labeled "Our Dental Assistant, To Be Well Shaken Before Taking."

545 West 164th Street.

EXTRACTIONS

No Literature can have a long continuance if not diversified with humor—ADDISON

A car saves time if you can find parking space as near the office as your home.

The kiss of the sun for pardon,
The song of the birds for mirth;
One is nearer God's heart in a garden
Than anywhere else on earth.

A man was about to receive the anesthetic preparatory to undergoing an operation.

"Your minister is here," remarked the surgeon; "do you wish to see him before we put you under?"

"No," pleasantly returned the patient. "I do not care to be opened with prayers."

It's hard to worry about Europe's troubles just after seeing a home star make a wild throw to first.

The Indians didn't have sense enough to restrict immigration, and look what happened to them.

Never scold a married man for failure to attend church on Sunday. That may be the only day he has to sew on buttons.

(Elmer)—My Pop wishes they would raise the street car fares.

(Jack)—What's the idea?

(Elmer)—'Cause when he walks to work now he only saves a nickel.

The slow march of civilization hasn't abolished much of anything except cotton stockings.

(Student)—This is my first case. The child has been eating candle ends.

(Doctor)—What have you done?

(Student)—Recommended a change of diet.

FIFTY YEARS AGO

Nobody ever got a wrong number.

Nobody ever got an electric light bill.

Nobody ever had a flat tire.

Nobody cussed static.

Nobody read titles out loud in the movies.

Nobody had heard of Hi Johnson, Bob La Follette, the farm bloc, the German Crown Prince, mah jong or jazz.

(Mistress)—What is your name, please?

(Applicant)—Miss Clancy.

(Mistress)—Of course you don't expect me to call you Miss Clancy.

(Applicant)—Oh, no ma'am. Not if you have an alarm clock.

IN THE WRONG TRENCH

A husky young Irishman strolled into the Civil Service room where they were holding physical examinations for candidates for places on the police force.

"Strip," ordered the police surgeon.

"Which, sor?"

"Get your clothes off and be quick about it," said the examiner.

The Irishman undressed. The doctor measured his chest and pounded his back.

"Hop over this rod," was the next command.

The man did his best, landing on his back.

"Double up your knees and touch the floor with your hands."

He lost his balance and sprawled upon the floor. He arose indignant but silent.

"Now jump under this cold shower."

"Sure an' thot's funny," muttered the applicant, but he obeyed.

"Now run around the room ten times. I want to test your heart and wind."

"I'll not," the candidate declared defiantly. "I'll stay single first."

"You'll stay single?" repeated the puzzled physician. "Say, what did you come here for?"

"For a marriage license, of course," said the stranger.

WHAT IS A BILLION?

You know how long a minute is, that there are sixty minutes in an hour and twenty-four hours in a day. This is the year 1924 A. D. and a billion minutes have not elapsed since the Christian era got under way. In less than a billion minutes, the glory that was Caesar's has faded into the romance of the Middle Ages, and that period of gallantry and knighthood has been fused in turn into the hard, cold facts of a flivver-ridden civilization. Almost twenty centuries have passed and three distinct stages in the development of mankind have been registered in history, all in less time than a billion minutes.

DIETETICS and HEALTH

Timely Information on Vitamins

In a recent Radio broadcast released through some thirty co-operating stations, Surgeon General Cumming of the United States Public Health Service gives some interesting information on the development and status of our knowledge of this important constituent of our food. "We have learned," says Dr. Cumming, "that our food should be composed of carbo-hydrates (starches and sugars) fats and proteins. We have learned that these had to be supplied in proper quantities. We have learned to measure the potential energy of our food in terms of calories—a word familiar to everybody."

More recently there has been discovered the fact that proteins differ greatly in nutrient value, and not only must the body have its proper quantity of proteins every day, but it is quite fastidious as to the kinds of protein which it demands.

Then came the study of vitamins, but the advent of these studies has not changed our previously known basic principles. This knowledge has, however, supplemented our previous information and added an additional factor of great significance.

Our first suspicion of the existence of such substances as vitamins was derived from the study of a disease which is particularly prevalent and of great importance in the East, known as beri-beri. It occurs among people who live largely on a diet of rice and its dietary origin had been suspected for some years. By a series of studies and a number of animal feeding experiments carried on by various observers at different times, our knowledge of vitamins has been built up. In addition to studies on beri-beri, observations and experiments were made in studying such diseases as rickets, scurvy and pellagra.

As a result of these studies, it was found that there do exist certain unidentified accessory dietary factors which are absolutely essential for nutrition and growth. These are called vitamins. They resemble one another at least in one particular, namely, they seem to be very potent in very small amounts. So far, they have defied chemical separation in pure form, and they cannot be identified except by physiological effects.

Up to the present time there are known four of these substances, which are not named, but are lettered, being called vitamins A, B, C

and D; for example, scurvy is believed to be due to the lack of vitamin C, which is found abundantly in fresh fruit juices and fresh uncooked vegetables of many kinds. Rickets is believed to be due in part at least to the lack of vitamin A, in which cod liver oil is especially rich. Beriberi is thought to be due to lack of vitamin B, and so on throughout the list. Not enough is known to make very definite statements as to their exact action and character, but the fact that such circumstances do exist and that they are absolutely necessary to man's well-being can no longer be doubted.

Their function is peculiar and can perhaps best be understood by a mechanical analogy which has been formulated by some clever writer, in which he compares the body and its foods to a gasoline engine and its motor. The organic foodstuffs, such as fats, sugar and starches, correspond to the fuel for the engine; the proteins and some of the mineral matters to the materials of which the motor is made; other mineral matters to the lubricant and the vitamin to the ignition spark, whose own energy is insignificant but without which the engine cannot run.

"Let me repeat," said Surgeon General Cumming, "that vitamin studies have not destroyed our old ideas about the selection of our foods, but have merely given us additional knowledge.

Vitamins are undoubtedly essential in our diet and without them nutrition and growth cannot be maintained. They are, however, widespread in nature, and an abundance of them will be found in every well-balanced ration.

"Let me emphasize this fact—we should obtain our vitamins from our food supplies and not from drug stores or from nostrum vendors; we need select only the proper foods to eat and we will get an abundant supply of these precious substances."

Vitamin D

At last the "chemical entity" that works the miracle in the yeast has been isolated and identified. Its measurements have been taken, its index of refraction has been registered, its formulae have been approximated. It can never go about again unrecognized upon its growth-giving errands through the realm of organic matter, says the *N. Y. Times.* Not as a criminal have its fingerprints been taken. It is one of the beneficent genii of human life. It was the vital principle in the leaven of the parable which the woman hid in three measures of meal. To be sure, the yeast, so rejuvenated and expanded, may become the leaven of unrighteousness, but it is essentially a wholesome agency. The professors at Teachers College in this city, Drs. Eddy, Williams and Kerr, who have at last succeeded in isolating this powerfully altru-

istic and stimulating but modest and elusive entity, deserve public recognition and congratulation.

Dr. Eddy hastens to give public warning against the claims which are likely to be made by unscrupulous persons or companies, that exceptional nutritional values, growth effects and rejuvenating influences can be had from these isolated vitamins. He states that there is at present no evidence that better results in these respects can be had with the purified material than with the food extracts or foodstuffs holding these vitamins in combination. Nevertheless, the discovery is likely to be of vast benefit to mankind. There can now be a more intelligent correlation of the vitamins, and man can be released from exclusive dependence upon the combination ready made in nature for those who live close to nature, but unsuitable for those who in an urbanized state become prone to embonpoint and flabbiness. Long life to "Vitamin D," or, as others have named it, "bios," which is but saying "Long life to life."

The Orange—A Noble Fruit

The orange is a noble fruit, a wondrous virtue in it lies; when it is near I care no hoot if I lack turkeys, roasts and pies. The orange grows upon a tree, and is not fashioned in a mill; it grows outdoors and it is free from punk preservatives that kill. Developed in the sunny air, the mellow zephyrs make it sweet, and no adulterants are there to warp men's vitals as they eat. All its ingredients are fine, and it is wholesome, through and through; no poison dyes of aniline have given it its golden hue. Long since when I had grievous pain athwart my midriff and my spine, a wise physician said, "In vain will you take pills and drugs of mine; fruit acids are the stuff you need to make your works as good as new; eat oranges—this is my rede—eat oranges the long day through." And so I eat them when I rise, I eat them ere I go to bed; I eat this fruit instead of pies, instead of codfish balls and bread. I have cut out the starchy spud, and everything the baker bakes, and now I'm full of rich red blood, and fit to whip my weight in snakes. I'm bearded like old Santa Claus, and once my whiskers wouldn't grow; new teeth are growing in my jaws, and like a rooster oft I crow. We eat too much of patent things, of victuals cooked upon a stove; and still the golden orange swings out yonder in the sunlit grove.—*Walt Mason.*

FUTURE EVENTS

The annual meeting of THE AMERICAN DENTAL SOCIETY OF EUROPE will be held in the Hotel de l'Europe, Amsterdam, on August 5 to 8, 1924. Special rates have been accorded by the management of the Hotel to all those attending the congress.

F. W. FLEMING, *Secretary,*
13 Queen Anne Street, London, W. I.

THE AMERICAN DENTAL LABORATORIES ASSOCIATION will meet in Chicago, September 15-17, 1924. A program consisting of an "all-star cast" is now being arranged.

Clinics and papers of interest to laboratory technicians and dentists will be given, and this should be by far the most interesting and instructive meeting that has been held by this organization.

The definite program will be announced at a future date and formal invitations will be sent to all laboratories in the United States and Canada.

The following are the officers of the American Dental Laboratories Association:

OFFICERS

J. C. Schwartz, Pres., Equitable Bldg., St. Louis, Mo.
E. L. Mueller, Vice-Pres., 1809 Capitol Ave., Omaha, Nebr.
W. H. Schroll, Secy., 5 S. Wabash Ave., Chicago, Ill.
I. J. Dresch, Treas., Nasby Bldg., Toledo, Ohio.

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Henry P. Boos, 608 Nicollet Ave., Minneapolis, Minn.
Samuel G. Supplee, 1 Union Square, New York, N. Y.
E. L. Mueller, 1809 Capitol Ave., Omaha, Nebr.
B. I. Martinez, 308 Lowry Bldg., St. Paul, Minn.

The Semiannual Meeting of the MARYLAND STATE DENTAL ASSOCIATION will be held at the Francis Scott Key Hotel, Frederick, Maryland, September 22, 23, and 24, 1924.

The sixty-first meeting of the SUSQUEHANNA DENTAL ASSOCIATION OF PENNSYLVANIA will be held at Irem Temple, Wilkes-Barre, Pa., October 21-23, 1924.